Global Glacier Change Bulletin Nr. 4 (2018-2019)

Edited by: Zemp, Michael ; Nussbaumer, Samuel U ; Gärtner-Roer, Isabelle ; Bannwart, Jacqueline ; Paul, Frank ; Hoelzle, Martin

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Global Glacier Change Bulletin

A contribution to

the Global Terrestrial Network for Glaciers (GTN-G) as part of the Global Climate Observing System (GCOS) and its Terrestrial Observation Panel for Climate (TOPC),

the Science Division and the Global Environment Outlook as part of the United Nations Environment Programme (Science Division and GEO, UNEP),

and the International Hydrological Programme of the United Nations Educational, Scientific and Cultural Organization (IHP, UNESCO)

Compiled by
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ISC (WDS) – IUGG (IACS) – UNEP – UNESCO – WMO | 2021

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Cover page

View of Gries Glacier and its proglacial area in September 2020 (photograph taken by M. Huss).

Preface by IACS (IUGG)

The International Association of Cryospheric Sciences (IACS) was established in 2007 as the youngest of eight Associations within the International Union of Geodesy and Geophysics (IUGG). IACS and the WGMS work together to collect information on worldwide glacier change, with the WGMS being a service of IACS and several other organizations. Since 1986, the WGMS has collected observations of changes in glacier mass, volume, area and length over time. This database of glacier fluctuations forms a critical component of cryospheric and climate-system monitoring, and provides much-needed information for the expanding suite of regional-to-global-scale models of glacier change.

The datasets compiled and maintained by the WGMS enable contributions to ongoing IACS working groups, including:
- ‘Regional Assessments of Glacier Mass Change (RAGMAC)’ whose aim is to introduce a new consensus estimate of global glacier mass changes and related uncertainties, and
- ‘Randolph Glacier Inventory (RGI) and its role in future glacier monitoring and GLIMS’ whose aims are to maintain and further develop the Randolph Glacier Inventory.

The WGMS also contributes information on glacier fluctuations to reports of the Intergovernmental Panel on Climate Change (IPCC), including the Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC) that was published in September 2019, and the Sixth Assessment Report (AR6) that is due for release in 2022.

Notable successes this past year include continued (2 FTE) and additional support (1 FTE, 2021–2024) for the WGMS by MeteoSwiss and the University of Zurich for updating and extending WGMS database infrastructure. This support follows a recommendation by IACS in the last evaluation. IACS chairs the Advisory Board for the Global Terrestrial Network for Glaciers (GTN-G), where the WGMS has taken on a leading role. A particular challenge (and opportunity) for the WGMS, as well as the larger community monitoring glacier change, is the rapidly increasing number of available glacier observations from space. This challenge ties in to the aims being addressed together by the WGMS and IACS through the RAGMAC working group.

Thanks to all contributors, Principle Investigators and National Correspondents for their continuing efforts in glacier monitoring, and for making their observations available to the scientific community through the WGMS. On behalf of the scientific community, we commend the WGMS for its ongoing leadership and its commitment to making the data it curates widely available and accessible.

Gwenn Flowers, Prof Dr
Head, Division of Glaciers
IACS

Lauren Vargo, Dr
Deputy Head, Division of Glaciers
IACS

Regine Hock, Prof Dr
President
IACS

Preface by WDS (ISC)

I first became aware of the work of the World Glacier Monitoring Service (WGMS) in late 2018, when I was hired by the International Science Council to create the International Technology Office (ITO) of the World Data System (WDS). The ITO has a mandate to support global initiatives that foster and improve the landscape and infrastructure of open scientific data access and the integration of data services with other important resources, specifically computing and software resources.

As part of the onboarding process, I began to familiarize myself with the work of the WGMS, a WDS member since 2011. I quickly learned that the WGMS is an exemplar organization, consistently and transparently providing user focused access to high quality data. Moreover, they are viewed as a fundamental pillar in the global community's response to climate change. Thanks to the work of the WGMS, we know that the surface areas of glaciers globally were close to steady state during the 1960s, but since then the trajectory has been dire. We have seen an almost doubling of ice loss rates in each decade between 1970 to 2020. There is no doubt that our climate crisis is picking up steam and the ability to state this with certainty is a testament to the good work of the WGMS. The WGMS serves us all, and begs the question: how can we honor their work?

We can honor the WGMS by recognizing their value. We can honor them by holding up their team members as an example of how to bring together and manage a talented group of individuals for the greater good. From spring 2021 on, the service will hire a database manager. Filling this role is consistent with their commitment to running a world class database. It is also evidence of the increasing size and scope of the data they manage, and the technologies they are adopting to ensure the data is easily available to the public. Far beyond periodic, narrative synthesis reports, the WGMS provides fully downloadable file access to both current and past versions of their database, intuitive visualizations via the Fluctuations of Glaciers Browser and the Global Terrestrial Network for Glaciers Browser, a Glacier App for mobile devices and live data services that are built on open standards used by geographic data specialists around the world. Using these services any researcher can easily bring up the WGMS data on their desktop as if it were their own. It is an impressive suite of responsibilities that are built with a keen eye toward the future. When the WGMS added satellite geodetic observations in 2018, their database was boosted exponentially. They responded intelligently to the new stresses on their database by migrating to larger enterprise structures that support their annual call for data feeds, increasingly complex metadata, and much larger requests for web services.

Going forward, when the WGMS highlights a plan for development we can honor them by supporting their vision and ensuring their sustainability so that the long, trustworthy chain of historical records and assessments is not broken. We can support them as they continue to adapt to new processing and publishing workflows that serve us all. We are fortunate to have the WGMS as part of the family of data centers in the WDS. They are a vital component of global open research, providing sound scientific assessments that are critical to grounded public discourse about the unprecedented challenges we face in our lifetime.

Karen Payne, Dr
Associate Director, WDS-ITO

Foreword by the WGMS Director

Glaciers around the globe continue to melt at rapid rates. In the time period covered by the present bulletin, the glaciers observed lost about 1 m water equivalent per year which corresponds to a loss of 1,000 litres of water reserve per square meter of ice cover and year. The corresponding Accumulation Area Ratios (AAR) indicate that the observed glaciers would be committed to an average area loss of 27% under the climatic conditions of the reporting period. With this, glaciers are continuing the historically unprecedented ice loss observed since the turn of the century and amounting to more than double the ice loss rates of the 1990s (based on the ‘reference’ glacier sample). Glaciers are indeed key indicators and a unique mean of displaying ongoing climate change. Their rapid decline not only alters the visual landscape of mountain and polar regions, it also has a very real impact on local hazard situations, regional water cycles, and global sea levels.

Glacier monitoring has been coordinated internationally by the WGMS and its predecessor organizations since 1894. The initial focus on glacier front variations and Ice Age theories has developed into a comprehensive monitoring strategy for assessing global glacier distribution and the changes in length, area, volume, and mass related to climate change. Today, we are pushing towards reaching global coverage from space-borne geodetic surveys (cf., Hugonnet et al., 2021). These geodetic observations can provide geodetic mass changes over decadal to multi-annual time periods but are hampered at shorter time scales by the required density conversion. The glaciological method is able to fill this gap by providing mass-balance observations with annual or seasonal resolution. For this bulletin, we even received daily observations of point mass balances from Swiss glaciers (cf., Landmann et al., 2020).

The present Global Glacier Change Bulletin is the fourth issue of this publication series. The primary focus is on glaciological mass-balance observations that are complemented by geodetic volume changes and front variation series. It serves as an authoritative source of illustrated and commentated information on global glacier changes based on the latest operations from the scientific collaboration network of the WGMS. The Global Glacier Change Bulletin No. 4 reports the observations from the hydrological years 2017/18 and 2018/19 as well as preliminary results from the ‘reference’ glaciers (with more than 30 years of ongoing measurements) for 2019/20. Since the last bulletin, we added more than 25,000 additional database records from almost 10,000 glaciers measured by about 400 Principal Investigators from 40 countries.

The compilation, analysis, and dissemination of standardized data and information on glacier distribution and changes are the core tasks of the WGMS. In addition, it is worth noting its recent key achievements since the publication of the last bulletin. The WGMS datasets and related assessments (Zemp et al., 2019, 2020) were prominently cited in the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC) and the upcoming Sixth Assessment Report (AR6). The WGMS team has been actively involved in several IACS working groups and released a new version of the Glacier Thickness Database (GlaThiDa; Welty et al., 2020). We were able to further extend the compilation of glacier volume changes using space-borne sensors within the framework of Europe’s Copernicus Climate Change Service (C3S) and were granted an additional database management position, jointly funded by UZH and MeteoSwiss, in order to make its database infrastructure fit for dealing with the increasing data volumes.

Sincere thanks are extended to WGMS co-workers, National Correspondents, and Principal Investigators around the world and their sponsoring agencies at national and international levels for their long-term commitment to building up an unrivalled database which, despite its limitations, nevertheless remains an indispensable treasury of international snow and ice research, readily available to the scientific community and to the public.

Michael Zemp, Prof Dr
Director, WGMS

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Please note:
In the print version, the main part of the Bulletin and the Appendix are provided separately. Hardcopies including both parts are distributed to more than 120 libraries worldwide. The electronic version includes both parts in one file.

1 INTRODUCTION

Internationally coordinated glacier monitoring began in 1894, with the periodic publication of compiled information on glacier fluctuations starting one year later (Forel, 1895; Allison et al., 2019). In the beginning, glacier monitoring focused mainly on observations of glacier front variations and after the late 1940s on glacier-wide mass-balance measurements (Haeberli, 1998). Beginning with the introduction of the Fluctuations of Glaciers (FoG) series in the late 1960s (PSFG, 1967; WGMS, 2012, and volumes in between), standardized data on changes in glacier length, area, volume and mass have been published at pentadal intervals. At the beginning of the 1990s, the Glacier Mass Balance Bulletin series (WGMS, 1991; WGMS, 2013, and issues in between) was designed to speed up access to information on glacier mass balance at two-year intervals. Since the late 1980s, glacier fluctuation data have been organized in a relational database (Hoelzle & Trindler, 1998) and are available in electronic form through websites of the WGMS (https://www.wgms.ch) and GTN-G (https://www.gtn-g.org). The Fluctuations of Glaciers web browser and the wgms Glacier App were launched in order to provide easy access to global glacier change data and to increase the visibility of related observers, their sponsoring agencies, and the internationally coordinated glacier monitoring network.

In the 1990s, an international glacier monitoring strategy was drawn up for providing quantitative, comprehensive, and easily understandable information relating to questions about process understanding, change detection, model validation and environmental impacts with an interdisciplinary knowledge transfer to the scientific community as well as to policymakers, the media and the public (Haeberli et al., 2000; Haeberli, 1998). This strategy has five tiers:

1. organizing glacier monitoring as a multi-component system across environmental gradients, thereby integrating glacier-wide observations at the following levels:
2. extensive glacier mass balance and flow studies within major climatic zones for improved process understanding and calibration of numerical models;
3. determination of glacier mass balance using cost-saving methodologies within major mountain systems to assess the regional variability;
4. long-term observations of glacier length changes and remotely sensed volume changes for large glacier samples within major mountain ranges for assessing the representativeness of mass-balance measurement series; and
5. glacier inventories repeated at time intervals of a few decades by using remotely sensed data.

Based on this strategy, the monitoring of glaciers has been internationally coordinated within the framework of GTN-G under the Global Climate Observing System (GCOS) in support of the United Nations Framework Convention on Climate Change (UNFCCC). The GTN-G is run by the WGMS in close collaboration with the U.S. National Snow and Ice Data Center (NSIDC) and the Global Land Ice Measurements from Space (GLIMS) initiative. The WGMS is a permanent service of the International Association of Cryospheric Sciences of the International Union of Geodesy and Geophysics (IACS/IUGG) and of the World Data System within the International Science Council (WDS/ISC) and operates under the auspices of the United Nations Environment Programme (UNEP), United Nations Educational, Scientific and Cultural Organization (UNESCO), and the World Meteorological Organization (WMO).

To further document the evolution and to clarify the physical processes and relationship involved in global glacier changes, the WGMS collects standardized information on changes in glacier length, area, volume, and mass through annual calls-for-data. In accordance with an agreement between the international organizations and the countries involved, a one-year retention period is granted to allow investigators time to properly analyze, document, and publish their observations before making them available. In 2014, a near-time reporting was introduced for the official 'reference' glaciers (with more than 30 years of continued mass-balance observations) in agreement with the responsible Principal Investigators. This allows the WGMS to report preliminary mass-balance estimates as soon as a few months after the end of the corresponding observation period. All submitted data are considered public domain and are made available in print and digital form through the WGMS at no cost under the requirement of appropriate citation.

The Global Glacier Change Bulletin series merges the former Fluctuations of Glaciers (Vol. I–X) and Glacier Mass Balance Bulletin (No. 1–12) series. It aims to provide an integrative assessment of global glacier changes every two years. In this process, the main focus is on mass-balance measurements based on the glaciological method (cf. Cogley et al., 2011). This method provides quantitative results at high temporal resolution, which are essential for understanding climate-glacier processes and for allowing the spatial and temporal variability of the glacier mass balance to be captured, even with only a small sample of observation points. The glaciological observations are complemented by results from the geodetic method (cf. Cogley et al., 2011) to extend the glaciological sample in space and time. The geodetic method provides overall glacier volume changes over a longer time period by repeat mapping from ground, air- or space-borne surveys and subsequent differencing of glacier surface elevations. It is recommended to periodically validate and calibrate annual glaciological mass-balance series with decadal geodetic balances to detect and remove systematic biases (Zemp et al., 2013). Meanwhile, geodetic observations from space-borne surveys allow to compute elevation and volume changes for thousands of glaciers. Related error bars are still quite large but the data allow to assess glacier mass-changes at decadal and regional to global scale. In addition, glacier front-variation series are reported for the documentation of clearly visibly glacier reactions to mass changes and for extending observations of glacier fluctuations backward in time.

The Global Glacier Change Bulletin No. 4 is organized in three main sections: global summary, regional summaries, and detailed information for selected glaciers. The global summary provides an overview of reported data and of glaciological balance results for the observation periods 2017/18 and 2018/19, including preliminary values for the ‘reference‘ glaciers based on the near-time reporting for 2019/20. This first section contains a global map of available glacier fluctuation data, tables with key statistics on reported data and glaciological balance results as well as a set of global figures summarizing reported data and results of changes in glacier mass, volume and length. The second section consists of standardized facts and figures on glacier changes for all glacierized regions of the world, each supplemented with mass balance and front-variation series from selected glaciers. The third section contains detailed information for selected glaciers to provide an insight into the results of the glaciological method. In addition, a list is included naming all Principal Investigators and their sponsoring agencies for the observation periods of the current bulletin as well as of all National Correspondents as of 2021. Data tables with the results for the observation periods of the current bulletin are given in the Appendix. Due to the large volume of available data, we printed only geodetic records (from all survey periods) for glaciers with glaciological observations in the current bulletin. The full report including the data Appendix is made available in digital format on the WGMS website as well as being printed and shipped to libraries around the world as a long-term guarantee for data availability. Full access to the latest and earlier versions of the database, including addenda from earlier years, can be accessed through a data browser or downloaded in csv data format from the WGMS website (https://www.wgms.ch).

2 GLOBAL SUMMARY

Pioneer surveys of accumulation and ablation of snow, firn and ice at isolated points date back to the end of the 19th century and the beginning of the 20th century (e.g., Mercanton, 1916). In the 1920s and 1930s, short-term observations (up to one year) were carried out at various glaciers in the Nordic countries. Continuous, modern series of annual/seasonal measurements of glacier-wide mass balance were started in the late 1940s in Sweden, Norway, and in western North America, followed by a growing number of glaciers in the European Alps, North America, and other glacierized regions. In the meantime, more than 7,300 glaciological mass-balance observations from 480 glaciers have been collected and made available by the WGMS.

For the observation periods covering the hydrological years 2017/18 and 2018/19, 320 annual mass-balance observations were compiled based on 170 glaciers worldwide. Of these observations, 69%, 64%, and 41% were reported including seasonal mass balance, mass distribution with elevation, and point measurements, respectively. In addition, more than 16,600 geodetic thickness changes and 812 front variations were reported from 15,835 and 446 glaciers, respectively, covering the current observation periods. The large number of geodetic observations is the result of the compilation of glacier volume changes provided by the glaciological community using space-borne sensors within the framework of ESA's Climate Change Initiative (CCI, CCI+) and Europe's Copernicus Climate Change Service (C3S). A global overview of available glacier change data is shown in Figure 2.1. Reported data for the observation periods covered by the present bulletin are given in Table 2.1. In addition, preliminary balance estimates for 2019/20 are given as reported for the 'reference' glaciers.

Table 2.1 Annual mass balances for the observation periods 2017/18 and 2018/19 as well as preliminary values (*) for 'reference' glaciers (highlighted in grey) for 2019/20. Abbreviations and units: PU = political unit; B18, B19, B20 in mm w.e.; ELA = equilibrium line altitude; AAR = accumulation area ratio. ELA_0 and AAR_0 correspond to balanced-budget ELA and AAR, respectively, and are derived from linear regressions with B as independent variable (cf. Chapter 4).

PU	Glacier name	1st/last/nr years	B18	B19	B20*	ELA18	ELA19	ELA_0	AAR18	AAR19	AAR_0
AQ	Bahía del Diablo	2000/2020/21	–130	–40		350	340	352	59	60	56
AQ	Hurd	2002/2019/18	–560	190		285	155	188	19	76	58
AQ	Johnsons	2002/2019/18	–80	550		200	120	190	52	93	58
AR	Agua Negra	2015/2020/06	–873	–163		5110	5040		15	28	
AR	Azufre	2018/2020/03	–2602	–3308		>3950	>3950		0	0	
AR	Brown Superior	2008/2019/12	–1511	–956							
AR	Conconta Norte	2008/2019/12	–2458	–1162							
AR	De Los Tres	1996/2020/10	–914			1575		1432	74		75
AR	Los Amarillos	2008/2019/12	248	–1485							
AR	Martial Este	2001/2020/20	–225	–494		1076	1090	1068	46	37	56
AT	Goldbergkees	1989/2020/32	–1697	–845		>3100	3050	2906	1	18	44
AT	Hallstätter Gletscher	2007/2020/14	–1853	–554		2808	2580	2498	11	46	62
AT	Hintereisferner	1953/2020/68	–1963	–680	–970	3507	3213	2920	7	36	66
AT	Jamtalferner	1989/2020/32	–2276	–1237				2769	0	9	56
AT	Kesselwandferner	1953/2020/68	–1619	–337	–522	3406	3222	3119	17	38	68
AT	Kleinfleisskees	1999/2020/22	–1377	–723		>3050	>3050	2864	0	19	59
AT	Pasterze	1980/2020/34	–1420	–1100	–1200	3130		2699	32		93
AT	Seekarles Ferner	2014/2020/07	–1510	–832		>3255	3200		9	16	52
AT	Stubacher Sonnblickkees[1]	1946/2020/75	–1507	–699		2955	2950	2747	7	26	58

PU	Glacier name	1st/last/nr years	B18	B19	B20*	ELA18	ELA19	ELA$_0$	AAR18	AAR19	AAR$_0$
AT	Venedigerkees	2013/2020/08	–1045	–505		2993	2907	2855	41	42	53
AT	Vernagtferner	1965/2020/56	–1419	–929	–820	3306	3344	3084	9	23	65
AT	Wurtenkees[2]	1983/2019/37	–1957	–1232		3050		2890	5		36
AT	Zettalunitz/ Mullwitzkees	2007/2020/14	–1239	–611				3084	13	22	43
BO	Charquini Sur	2003/2018/16	–25			5180		5173	33		36
BO	Zongo	1992/2018/27	284			5226		5264	78		68
CA	Conrad[3]	2015/2019/05	–600			2645			42		
CA	Devon Ice Cap NW	1961/2020/60	46	–521	–500	930	1550	1015	74	11	70
CA	Helm	1975/2019/43	–1410	–1990		2090	2090	1993	2		36
CA	Illecillewaet	2015/2019/05	–1046	–710		2570	2580		36	45	
CA	Kokanee	2015/2019/05	–306	–1006		2580	2770		62	22	
CA	Meighen Ice Cap	1960/2020/61	199	–826	–800	<90	>270	165	100	0	49
CA	Melville South Ice Cap	1963/2020/56	221	–360	–1059	<526	>720		100	0	
CA	Nordic[3]	2015/2019/05	–490			2600			32		
CA	Peyto	1966/2018/53	–1020			2800		2608	11		52
CA	Place	1965/2019/54	–1560	–1730		2450	2450	2085	1		48
CA	White	1960/2018/56	8			936		936	75		70
CA	Zillmer	2015/2018/04	–760			2470			40		
CH	Adler	2006/2019/14	–458	–831		3475	3625	3395	44	26	57
CH	Allalin	1956/2020/65	–801	–559	–395	3605	3445	3247	24	41	58
CH	Basòdino	1992/2019/28	–1440	–331		>3155	2975	2871		30	51
CH	Claridenfirn[4]	1915/2019/105	–1480	–1007		2945	2925	2755	24	29	62
CH	Corbassière	1997/2019/23	–922	–887		3385	3395	2987	31	30	70
CH	Corvatsch South[5]	2014/2019/06	–1832	–2083		3352	>3427		5		
CH	Findelen	2005/2019/15	–723	–244		3355	3295	3214	46	56	66
CH	Giétro	1967/2020/54	–664	–1318	–439	3245	3355	3157	45	13	62
CH	Gries	1962/2020/59	–2045	–865	–1218	>3275	3095	2821		7	56
CH	Hohlaub	1956/2019/64	–623	–1118		3355	3395	3149	30	25	59
CH	Murtèl[5]	2013/2019/07	–1233	–1299		3237	3247	3185	12	8	54
CH	Pizol[5]	2007/2019/13	–1847	–827		>2757	2727	2685		5	17
CH	Plaine Morte	2010/2019/10	–2101	–1769		>2895	>2825				
CH	Rhone	1885/2019/42	–1000	–773		3055	2935	2847	39	55	61
CH	Sankt Anna[5]	2012/2019/08	–1077	–345		2842	2817	2769	10	23	35
CH	Schwarzbach[5]	2013/2019/07	–1838	–162		>2832	2797			46	
CH	Schwarzberg	1956/2019/64	–903	–776		3165	3175	3018	32	31	56
CH	Sex Rouge[5]	2012/2019/08	–1658	–1890		>2877	>2882				
CH	Silvretta	1919/2020/102	–1389	–1457	–915	3025	3015	2746	1	2	56
CH	Tsanfleuron	2010/2019/10	–2492	–1482		>2975	>2975				
CL	Amarillo[5]	2008/2019/12	893	–2632							
CL	Echaurren Norte[6]	1976/2020/45	–3592	–2246	–2430						
CL	Mocho Choshuenco SE	2004/2020/11	–272	–889		1946	1939	1922			59
CN	Parlung No. 94	2006/2019/13	–1990	–1570		5590	5489	5351	30		53
CN	Urumqi Glacier No. 1[7]	1959/2020/62	–711	–272	–668	4190	4047	4005	19	45	59
CN	Urumqi Glacier No. 1 E-Branch	1988/2020/33	–817	–348	–758	4180	4012	3951	16	43	64

PU	Glacier name	1st/last/nr years	B18	B19	B20*	ELA18	ELA19	ELA_0	AAR18	AAR19	AAR_0
CN	Urumqi Glacier No. 1 W-Branch	1988/2020/33	–521	–136	–508	4200	4081	4054	25	50	60
CO	Conejeras[6]	2006/2019/14	–3411	–4982		4826	>4911			0	
CO	Ritacuba Blanco	2009/2019/11	656	384		5027	4984	5011	69	68	55
EC	Antizana 15 Alpha	1995/2020/26	–277	–1047		5138	5152	5065	67	65	72
ES	Maladeta[6]	1992/2020/29	257	–1582		3092	>3200	3069	46	0	43
FR	Argentière	1976/2020/45	–1408	–1428	–1000						
FR	Gébroulaz	1995/2019/25	–1240	–1660							
FR	Ossoue[6]	2002/2019/18	–910	–2690					0		51
FR	Saint Sorlin	1957/2019/63	–2020	–2880				2863			
FR	Sarennes[6]	1949/2020/72	–1960	–3140	–100	>2973			0		
GL	Freya	2008/2019/12	1308	–750		<200	>1300	690	100	0	60
GL	Mittivakkat	1996/2019/24	–360	–1640		600	>900	497	41	0	58
GL	Qasigiannguit	2013/2019/07	–332	–1772		>1000	>1000		0	0	
IN	Bara Shigri	2017/2019/03	–820	380							
IN	Batal	2017/2019/03	–540	50							
IN	Chhota Shigri	1987/2019/19	–400	537		5080	4930	4974	47	70	60
IN	Gepang Gath	2017/2019/03	–1510	250							
IN	Pensilungpa (Glacier No. 10)	2017/2018/02	–560								
IN	Samudra Tapu	2017/2019/03	–1560	–220							
IN	Stok	2015/2019/05	–630	–10		5578	5471		63	70	
IN	Sutri Dhaka	2017/2019/03	–1340	210							
IS	Brúarjökull	1993/2020/28	62	–304		1190	1220	1203	66	57	61
IS	Dyngjujökull	1992/2020/23	76	–379		1335	1415	1348	65	59	62
IS	Eyjabakkajökull	1991/2020/29	–390	–728		1115	1150	1084	53	40	55
IS	Hofsjökull E	1989/2020/32	340	–1570		1100	1300	1144	58	37	51
IS	Hofsjökull N	1988/2020/33	240	–1320		1200	1380	1255	60	24	51
IS	Hofsjökull SW	1990/2020/31	850	–920		1190	1390	1266	70	47	53
IS	Köldukvíslarjökull	1992/2020/27	323	–1507		1340	1550	1361	62	38	57
IS	Langjökull Ice Cap	1997/2020/24	–39	–2230					55	23	56
IS	Tungnárjökull	1986/2020/29	–320	–1914		1175	1415	1143	58	25	62
IT	Campo settentrionale[6]	2010/2019/10	–1325	–1192		3085	3080	3053	16	25	41
IT	Caresèr[6]	1967/2020/54	–1981	–1432	–1371	>3268	>3268	3093	0	1	44
IT	Ciardoney[6]	1992/2019/28	–1450	–1650		>3150	>3150	2980	0	0	54
IT	Grand Etret	2000/2020/21	–653	–292							
IT	Vedretta de La Mare	2003/2019/17	–1185	–1052		3562	>3587	3164	8	10	48
IT	Lupo	2010/2019/10	–1751	–379		>2760	2600		1	29	48
IT	Malavalle/ Übeltalferner	2002/2019/18	–1789	–945		3283	3274	3002	2	5	45
IT	Pendente/ Hangender Ferner	1996/2019/24	–2229	–1048		>2950	2938	2814	0	2	44
IT	Vedretta occ. di Ries/ Westlicher Rieserferner	2009/2019/11	–1365	–1140		>3325	>3325	3001	0	0	49
IT	Suretta meridionale[6]	2010/2019/10	–2441	–144		>2925	2770		0	54	
IT	Timorion	2001/2019/17	–1069	–1326		>3485	3435		0	24	
JP	Hamaguri Yuki[5]	1967/2018/52	–1790								
KG	Abramov	1968/2020/40	56	–660		4195	4245	4155	57	75	65

PU	Glacier name	1st/last/nr years	B18	B19	B20*	ELA18	ELA19	ELA$_0$	AAR18	AAR19	AAR$_0$
KG	Batysh Sook/ Syek Zapadniy	1971/2020/15	–743	–1048		4375	4395	4201	20	7	59
KG	Bordu	2016/2020/05	–870	–960		4450	4440		12	12	
KG	Glacier No. 354 (Akshiyrak)	2011/2020/10	–491	–916		4295	4345	4163	48	11	58
KG	Glacier No. 599 (Kjungei Ala-Too)	2015/2020/06	–278	–433		4041	4079		39	26	
KG	Golubin	1969/2020/36	–50	–78		3785	3795	3790	72	72	71
KG	Kara-Batkak	1957/2020/49	–810	–540		4020	4010	3848	39	40	57
KG	Sary Tor (Glacier No. 356)	1985/2020/11	–540	–850		4380	>4760	4219	32	0	50
KG	Turgen-Aksuu	2019/2019/01		–567			4056			50	
KZ	Ts. Tuyuksuyskiy	1957/2020/64	–75	–580	–287	3780	3900	3752	51	32	52
NO	Ålfotbreen	1963/2020/57	–2036	–2439	959	>1368	>1368	1207	0	0	53
NO	Austdalsbreen[8]	1988/2019/32	–1531	–1209		>1747	>1740	1420	0	0	69
NO	Engabreen	1970/2020/51	–1629	788	1170	>1544	1094	1160	0	76	60
NO	Gråsubreen	1962/2020/59	–1819	–1690	–900	>2283	>2277	2100	0	0	36
NO	Hansebreen	1986/2019/34	–2651	–3014		>1310	>1310	1144	0	0	56
NO	Hellstugubreen	1962/2020/59	–1630	–1873	–600	2100	>2213	1851	4	0	56
NO	Langfjordjøkelen	1989/2020/30	–2129	–383		>1043		763	0		61
NO	Nigardsbreen	1962/2020/59	–852	–266	1608	1675	1580	1551	36	62	59
NO	Rembesdalskåka	1963/2020/58	–1279	–771	707	>1854	1755	1667	0	40	72
NO	Storbreen	1949/2020/72	–1969	–1519	0	2005	2005	1716	3	3	57
NP	Mera	2008/2019/12	–920	–800		5796	5782	5546	28	29	56
NP	Pokalde	2010/2019/10	–1290	–1120		>5655	>5718	5578	0	0	47
NP	Rikha Samba	1999/2019/09	–345	–351		5749	5842	5774	70	44	
NP	West Changri Nup	2011/2019/09	–2100	–1690		5616	5585	5548	3	15	24
NP	Yala	2012/2019/08	–1542	–1285		5487	5509	5391	18	20	41
NZ	Brewster	2005/2019/15	–2217	–1333		2122	2033	1937	13	20	46
NZ	Rolleston	2011/2020/10	–1761	–1964		1834	1902	1805	25	1	54
PE	Artesonraju	2005/2019/15	–792	–1285		4990	5062	5052			
PE	Yanamarey	1978/2019/25	–360	–895		4949	4967	4930			28
RU	Djankuat	1968/2020/53	440	–120	–1020			3189			59
RU	Garabashi	1984/2020/37	–888	–834	–1427	3990	4130	3789		32	60
RU	Leviy Aktru	1977/2020/38		–425			3250	3163		63	61
SE	Mårmaglaciären	1990/2019/29	–1370	–910		1663	1626	1578	7	14	35
SE	Rabots glaciär	1946/2020/37	–1590	–650	–310	1574	1468	1374	4	24	49
SE	Riukojietna	1986/2020/32	–1400	–610		>1430	>1430	1336	0	0	56
SE	Storglaciären	1946/2020/75	–1600	–310	–140	1569	1501	1463	19	42	45
SJ	Austre Brøggerbreen	1967/2020/54	–880	–710	–1740	525	459	291	1	5	47
SJ	Austre Lovénbreen	2008/2018/11	–810					363			62
SJ	Grønfjord E	1986/2019/09	–1407	–1514		>557	>557		0	0	
SJ	Hansbreen[8]	1989/2019/31	–631	–483				311	25	39	56
SJ	Irenebreen	2002/2019/18	–1498	–1186		>652	>652	292			34
SJ	Kongsvegen[8]	1987/2020/34	–210	–470		574	703	535	34	5	47
SJ	Kronebreen[8]	2003/2018/10	–10			695		672	38		43
SJ	Midtre Lovénbreen	1968/2020/53	–770	–560	–1590	506	426	309	2	12	52
SJ	Nordenskioeldbreen	2006/2019/14	–305	–107		784	684	661	36	48	50
SJ	Svenbreen	2011/2018/08	-830								

PU	Glacier name	1st/last/nr years	B18	B19	B20*	ELA18	ELA19	ELA$_0$	AAR18	AAR19	AAR$_0$
SJ	Waldemarbreen	1995/2019/25	–1743	–1061		>579	>489	284	0	0	42
SJ	Werenskioldbreen	1980/2018/09	–750			475			18		
TJ	East Zulmart (Glacier No. 139)	2019/2019/01		-262			5350			48	
US	Columbia (2057)	1984/2020/37	–630	–1870	–892	1660	1730	1577	30	14	64
US	Daniels	1984/2020/37	–680	–1650					50	16	61
US	Easton	1990/2020/31	–500	–1700	-633	2125	2300	2063	49	38	66
US	Gulkana	1966/2020/55	–380	–1460	–280	1810	1977	1742			62
US	Ice Worm	1984/2020/37	–750	–2050					44	5	63
US	Lemon Creek	1953/2020/68	–2520	–3160	–1020	>1717	2034	1017			60
US	Lower Curtis	1984/2020/37	–820	–1440		1850	1675	1651	41	20	62
US	Lynch	1984/2020/37	–640	–1700					43	22	65
US	Rainbow	1984/2020/37	–530	–1180	–441	1825	1950	1702	56	32	65
US	Sholes	1990/2020/31	–820	–1970					46	18	62
US	South Cascade	1953/2020/67	–680	–2050	-60	2040	>3264	1908			54
US	Sperry	2005/2020/16	90	–2000		2494	2557	2441			
US	Taku[9]	1946/2020/75	–1360	–2270		1307	1527	1039	49		
US	Wolverine	1966/2020/55	–1860	–1530	–1860	1366	1266	1162			63
US	Yawning[6]	1984/2019/36	–480	–1760					50	20	64

1 = based on Ba-AAR regression from 1963/64 to 1979/80

2 = influenced by strong glacier disintegration and artificial snow management

3 = no annual balance for 2018/19 since field program was discontinued after spring visit

4 = balances include estimates for dry calving

5 = glacieret (cf. Cogley et al., 2011)

6 = influenced by strong glacier disintegration

7 = In 1993, Urumqi Glacier No. 1 divided into two parts: the East Branch and the West Branch.

8 = glacier influenced by calving

9 = The mass balance of this tidewater glacier is determined by a combination of snow pit, ablation stake measurements, observations of the transient snowline, and the ELA.

Climate (change)-related trend analysis is, in the ideal case, based on long-term measurement series. Ongoing glaciological mass-balance records for more than 30 continuous observation years are now available for a set of 42 'reference' glaciers. These glaciers have well-documented and long-term mass-balance programmes based on the direct glaciological method (cf. Østrem & Brugman, 1991; Cogley et al., 2011) and are not dominated by non-climatic drivers such as calving or surge dynamics. Furthermore, it is recommended that these glaciological results be validated and, if necessary, calibrated with independent results from the geodetic method (cf. Zemp et al., 2013). In collaboration with the GTN-G Advisory Board, the criteria for being awarded the status of a 'reference' glacier were revised in 2017 providing more details with regard to preconditions, length of time series, observational gaps, detailed information, validation and calibration. Results from this sample of glaciers in North and South America and Eurasia are summarized in Table 2.2. Note that the 'reference' glacier sample slightly changes between bulletins. As such, the three glaciers in the Russian Altay (Maliy Aktru, Leviy Aktru, Vodopadniy) lost their reference glacier status since the corresponding observation programmes were interrupted after 2012, but could be resumed at Leviy Aktru in 2018/19. Instead, Garabashi (RU), Pasterze (AT), Rabots glaciär (SE), and Easton (US) have attained sufficiently long time series and fulfill the 'reference' glacier criteria.

Table 2.2 Summarized mass-balance data. A statistical overview of the results of the 'reference' glacier sample is given for the three recent reporting periods 2018, 2019, and 2020* (upper table) in comparison with corresponding values averaged for the decades 1981–1990, 1991–2000, 2001–2010, and 2011–2020 (lower table). All annual balance values in mm w. e.; * = preliminary values.

	2017/18	2018/19	2019/20*
mean specific (annual) mass balance	–1195	–1214	–626
standard deviation	831	859	818
minimum value	–3592	–3160	–2430
maximum value	440	788	1608
nr of positive/reported balances	5/42	1/40	4/37
mean AAR	23%	22%	26%

decadal averages of:	1981–1990	1991–2000	2001–2010	2011–2020
mean specific (annual) mass balance	–298	–436	–793	–906
standard deviation	754	808	873	883
minimum	–1967	–2509	–2940	–2968
maximum	1847	1326	958	1065
avg nr of positive/reported balances	11/40	10/42	7/41	6/41
mean AAR	48%	45%	35%	30%

Taking the two years of this reporting period and preliminary results for 2019/20 together (from the near-time reporting), the mean annual mass balance was –1.0 m w.e. per year. This is 25% more negative than the mean annual mass balance for the first decade of the 21st century (2001–2010: –0.8 m w.e. per year) which was without precedent on a global scale, at least for the time period with available observations (Zemp et al., 2015). Since the turn of the century, the maximum mass loss of the 1980–2000 time period (observed in 1997/98) was exceeded seven times: in 2002/03, 2004/05, 2005/06, 2010/11, 2014/15, 2017/18, and again in 2018/19. The percentage of positive annual mass balances decreased from 28% in the 1980s to 9% (2017/18–2018/19), and there have been no more years with a positive mean balance for more than four decades. The melt rate and cumulative loss in glacier thickness continues to be extraordinary. Furthermore, the analysis of mean AAR values shows that the glaciers are in strong and increasing imbalance with the climate and hence will continue to lose mass even if climate remained stable (Mernild et al., 2013).

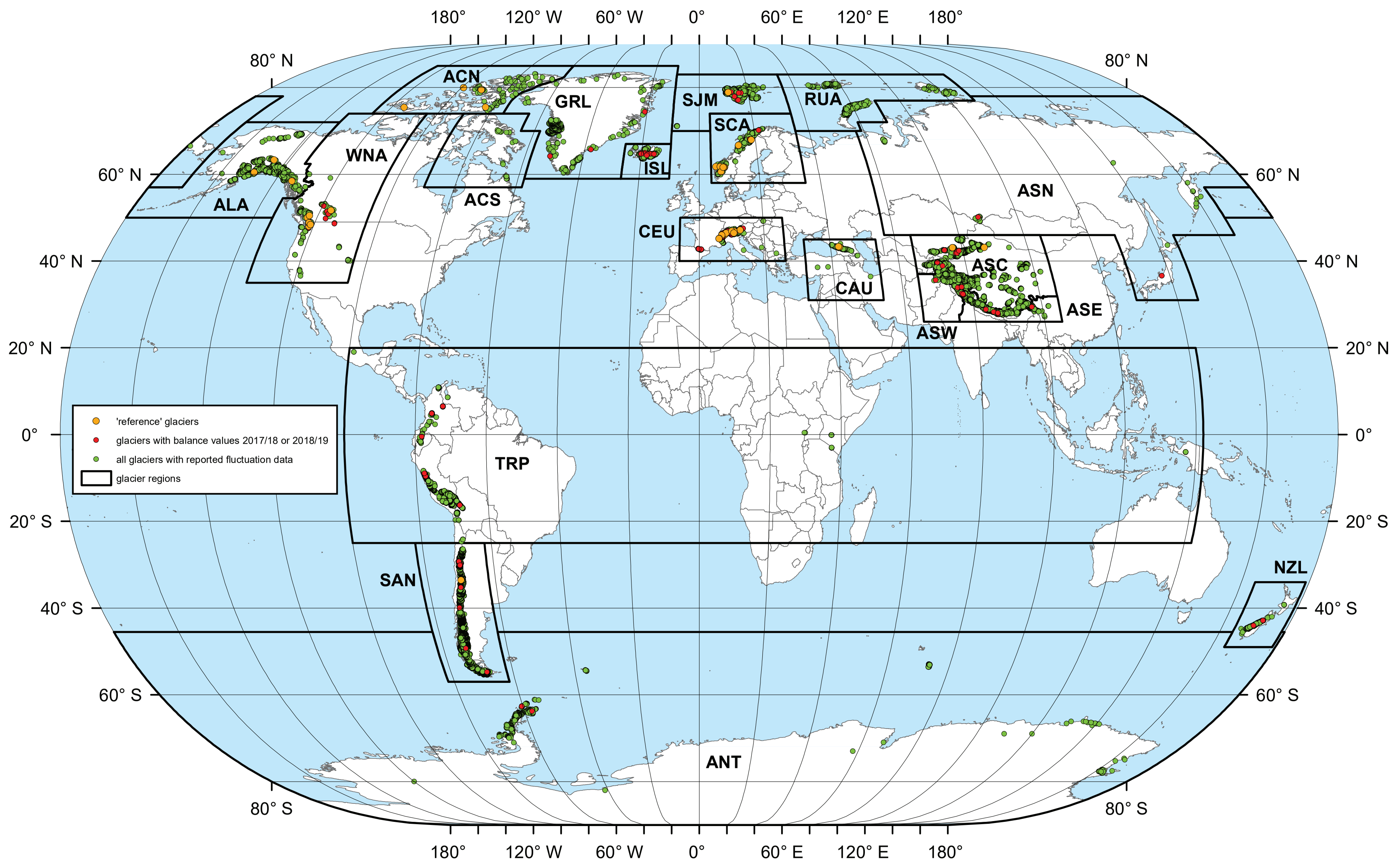


Figure 2.1 Location of the 42,200 glaciers for which fluctuation data or special events are available from the WGMS. This overview includes 170 glaciers with reported mass-balance data for the observation periods 2017/18 and 2018/19, and 42 ‘reference‘ glaciers with well-documented and independently calibrated, long-term mass-balance programmes based on the glaciological method. The glacier regions are based on GTN-G (2017).

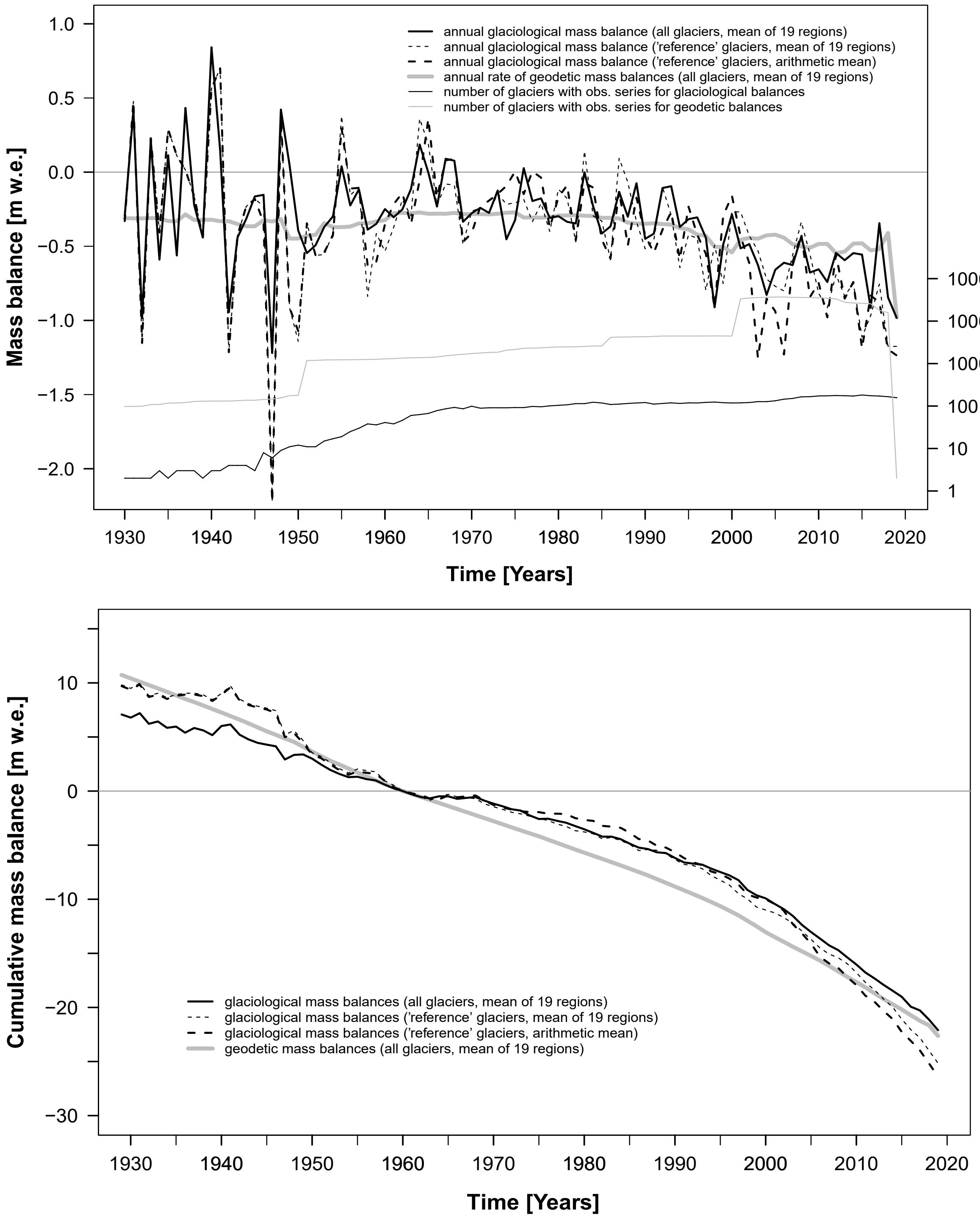


Figure 2.2 Global averages of observed mass balances from 1930 to 2019. Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of observed glaciers (upper graph). Cumulative annual averages relative to 1960 (lower graph). Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}. Note that the strong variability in the glaciological data before 1960 is due to the small sample size.

The arithmetic mean of the 'reference' glaciers included in the analysis is based on a small sample and influenced by the large proportion of Alpine and Scandinavian glaciers. Therefore, mean values are also calculated for (i) all mass balances available, independent of record length, and (ii) using only one single value (averaged) for each of the 19 regions (cf. GTN-G, 2017). Looking at the regional average of the 'reference' glaciers, both years 2017/18 and 2018/19 resulted in the most negative reported balances since 1960 with an annual average ice loss of 1.2 m w.e. All years since 2010 rank in the top 15 with respect to glacier mass loss. Note that extreme balance values before 1960 are strongly influenced by the very small sample size. Looking at the arithmetic mean, the five most negative balance years were 2002/03, 2018/19, 2005/06, 2017/18, and 2014/15, which were influenced by very negative balances reported from the large sample of European glaciers. Figure 2.2 shows the number of reported observation series as well as annual and cumulative results for all three means. In their general trend and magnitude, all three averages relate quite closely to each other and are in good agreement with the results from a moving-sample averaging of all available data (cf. Kaser et al., 2006; Zemp et al., 2009; Zemp et al., 2015). The global average cumulative mass balance indicates a strong mass loss in the first decade after the start of measurements in 1946 (though based on few observation series only), slowing down in the second decade (1956–1965; based on observations above 30° N only), followed by a moderate ice loss between 1966 and 1985 (with data from the Southern Hemisphere only since 1976) and a subsequent acceleration of mass loss to the present time (2019).

The geodetic method (cf. Cogley et al., 2011) provides overall glacier-volume changes over a longer time period by repeat mapping from ground, air- or spaceborne surveys and subsequent differencing of glacier-surface elevations. The geodetic results allow the glaciological sample to be extended in both space and time (Figures 2.2, 2.3). Over the last years, we were able to boost the geodetic sample from a few thousand records to more than 111,800 observations from 37,400 glaciers. The difference in survey periods between the glaciological and the geodetic data becomes manifest in the variability of the two graphs: a smooth line with step changes towards more negative balances for the geodetic sample, and a strong variability with a negative trend for the glaciological observations. Overall, the results from both methods match with regard to the increased ice loss towards the early 21st century.

In a recent study, Zemp et al. (2019) combined glaciological and geodetic (from DEM differencing) datasets to a global assessment and show that glaciers alone lost 9,625 billion tons of ice between 1961 and 2016, corresponding to a sea-level equivalent of 27 millimetres. The global mass loss of glacier ice has increased significantly in the last 30 years and currently amounts to 335 billion tons of lost ice each year. This corresponds to an increase in sea levels of almost 1 millimetre per year. Zemp et al. (2020) presented a new approach to estimate and correct for the bias in the glaciological sample. These ad hoc estimates for the latest years (2016/17–2019/20) indicate that global glacier mass loss has further increased with sea-level rise contributions exceeding 1 mm per year, which corresponds to more than a quarter of the currently observed sea-level rise (cf. IPCC, 2019). This ice loss of all glaciers roughly corresponds to the mass loss of Greenland's Ice Sheet, and clearly exceeds that of the Antarctic Ice Sheet.

Direct observations of glacier-front positions extend back into the 19th century. This data sample has been extended in space based on remotely sensed length change observations and continued back in time by reconstructed front variations. Overall, the database contains more than 48,500 observations which allow the front variations of about 2,500 glaciers to be illustrated and quantified back into the 19th century. Additional reconstruction series from 39 glaciers extend far into the Little Ice Age (LIA) period, i.e., to the 16th century. The global compilation of front-variation data, as qualitatively summarized in Figure 2.4, shows that glacier retreat has been dominant for the past two centuries, with LIA maximum extents reached (in some regions several times) between the mid-16th and the late 19th centuries. The qualitative summary of cumulative mean annual front variations (Fig. 2.4) reveals a distinct trend toward global centennial glacier retreat, with the early 21st century marking the historical minimum extent in all regions (except New Zealand (NZL) and Antarctic and Sub Antarctic Islands (ANT), where few observations are available) at least for the time period of documented front variations. Intermittent periods of glacier re-advance, such as those in the European Alps around the 1920s and 1970s or in Scandinavia in the 1990s, are barely to be found in Figure 2.4a because they do not even come close to achieving LIA maximum extents. Figure 2.4b provides a better overview of these re-advance periods by highlighting the years with a larger ratio of advancing glaciers. A qualitative overview of regional changes from both the glaciological and the geodetic method is given in Figure 2.3 and discussed in more detail in Section 3 on regional summaries.

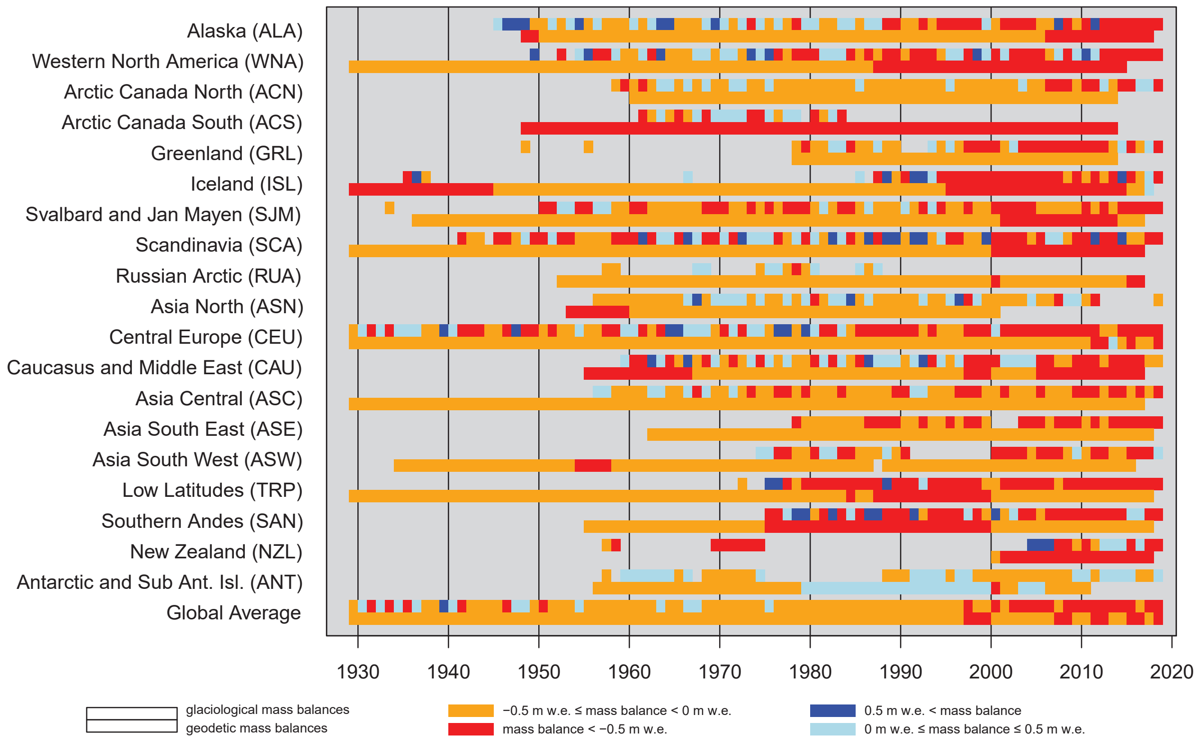


Figure 2.3 Regional mass balances from 1930 to 2019. Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown for 19 glacier regions and for the global average. Geodetic mass balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

A global and regional overview of the observational datasets is given in Figures 2.3–2.7. Overall, the Fluctuations of Glaciers database contains around 219,000 observations from 42,200 glaciers (Table 2.3). A look at all the data samples reveals that the glaciological sample has been steadily increasing over the past 25 years. This reflects the successful efforts of the observers to continue and extend their monitoring programmes in several regions as well as of the WGMS to compile these results through its collaboration network. The geodetic sample could be greatly increased in many regions. The decline in the geodetic sample over the past years has to do with the typically decadal time period and the normal post-processing character of geodetic surveys. In the case of the observational front-variation sample, the decrease in observations is reported to be caused mainly by the abandonment of in-situ programmes without remote-sensing compensation.

Table 2.3 Database statistics and increase from current observation periods.

Dataset	Number of glaciers	Number of observations	Increments since WGMS (2020)
Front variations (from observations)	2,581	46,678	+40/+838
Front variations (from reconstructions)	39	1,879	+1/+24
Mass balance (glacier-wide)	482	7,386	+22/+354
Mass balance (point information)	141	46,355	+6/+5,333
Volume/thickness change (geodetic method)	37,446	111,884	+9,643/+17,133
Special events	2,747	4,818	+207/+1,420
Glacier maps	101	157	+15/+15

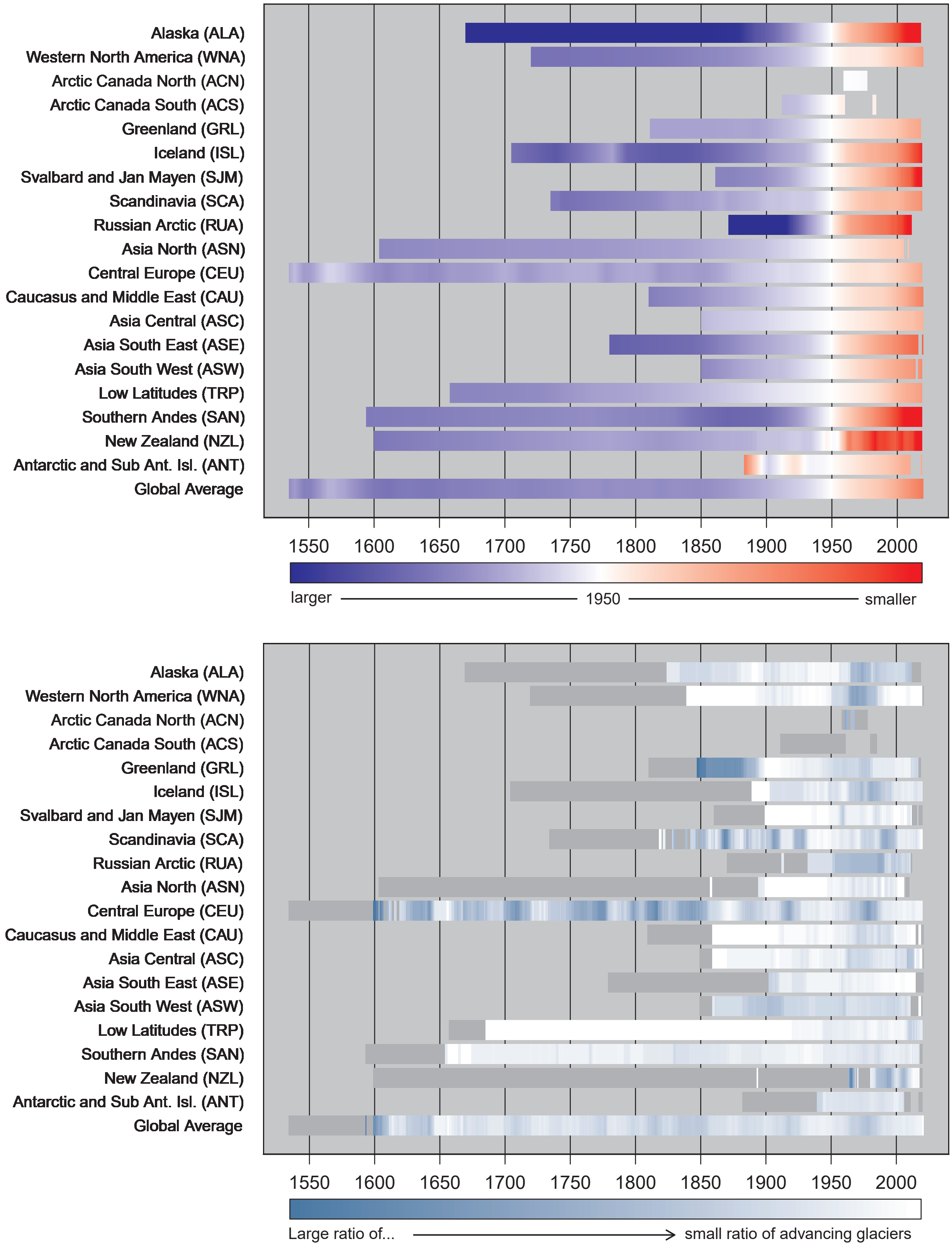


Figure 2.4 Global front variation observations from 1535 to 2019. Upper Figure: Qualitative summary of cumulative mean annual front variations. The colours range from dark blue for maximum extents (+2.5 km) to dark red for minumum extents (–1.6 km) relative to the extent in 1950 as a common reference (i.e. 0 km in white). Lower Figure: Qualitative summary of the ratio of advancing glaciers. The colours range from white for years with no reported advances to dark blue for years with a large ratio of advancing glaciers. Periods with very small data samples ($n < 6$) are masked in dark grey. The figure is based on all available front variation observations and reconstructions, excluding absolute annual front variations larger than 210 m a^{-1} in order to reduce the effects of calving and surging glaciers.

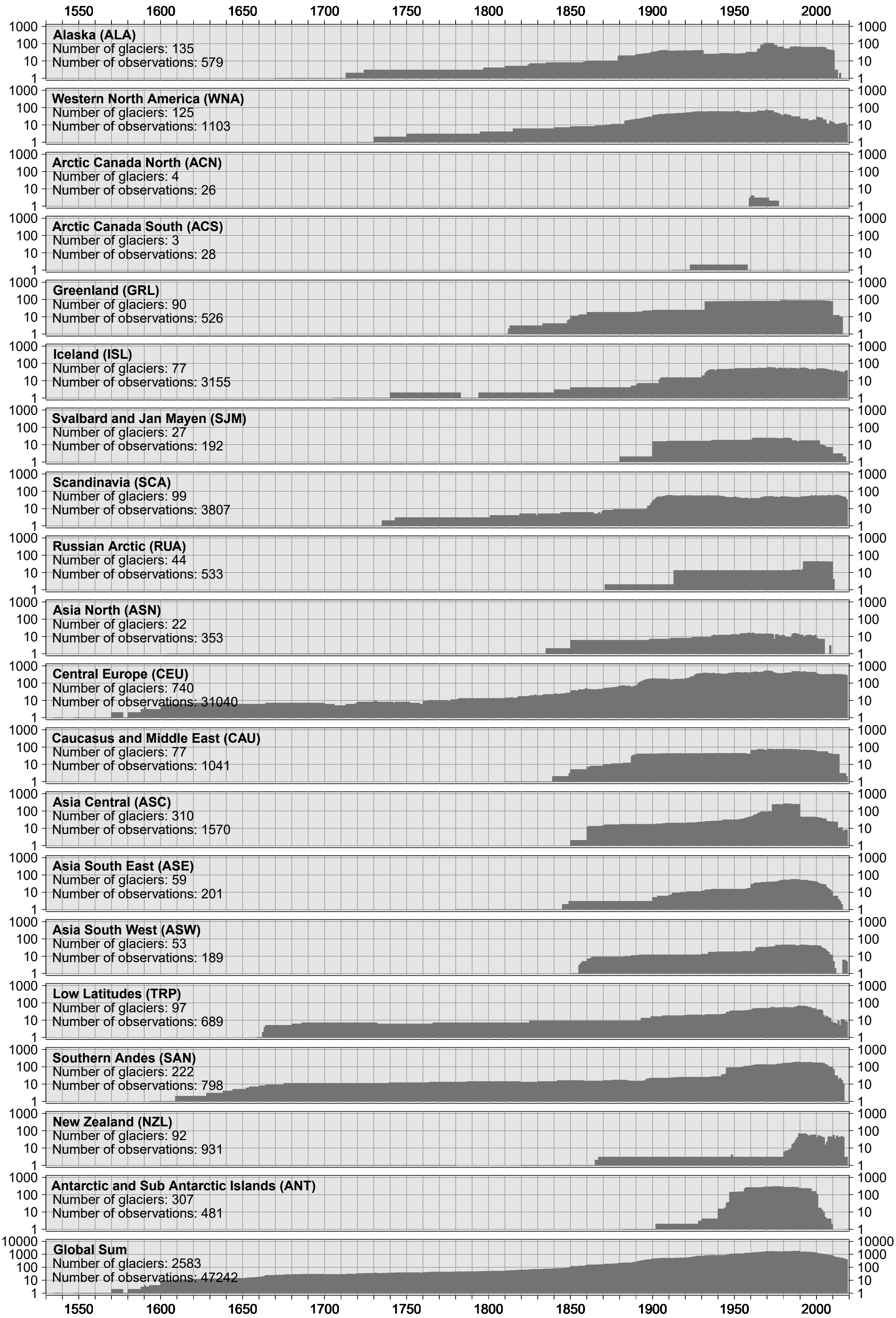


Figure 2.5 Regional and global number of glaciers with front-variation data from 1535–2019.

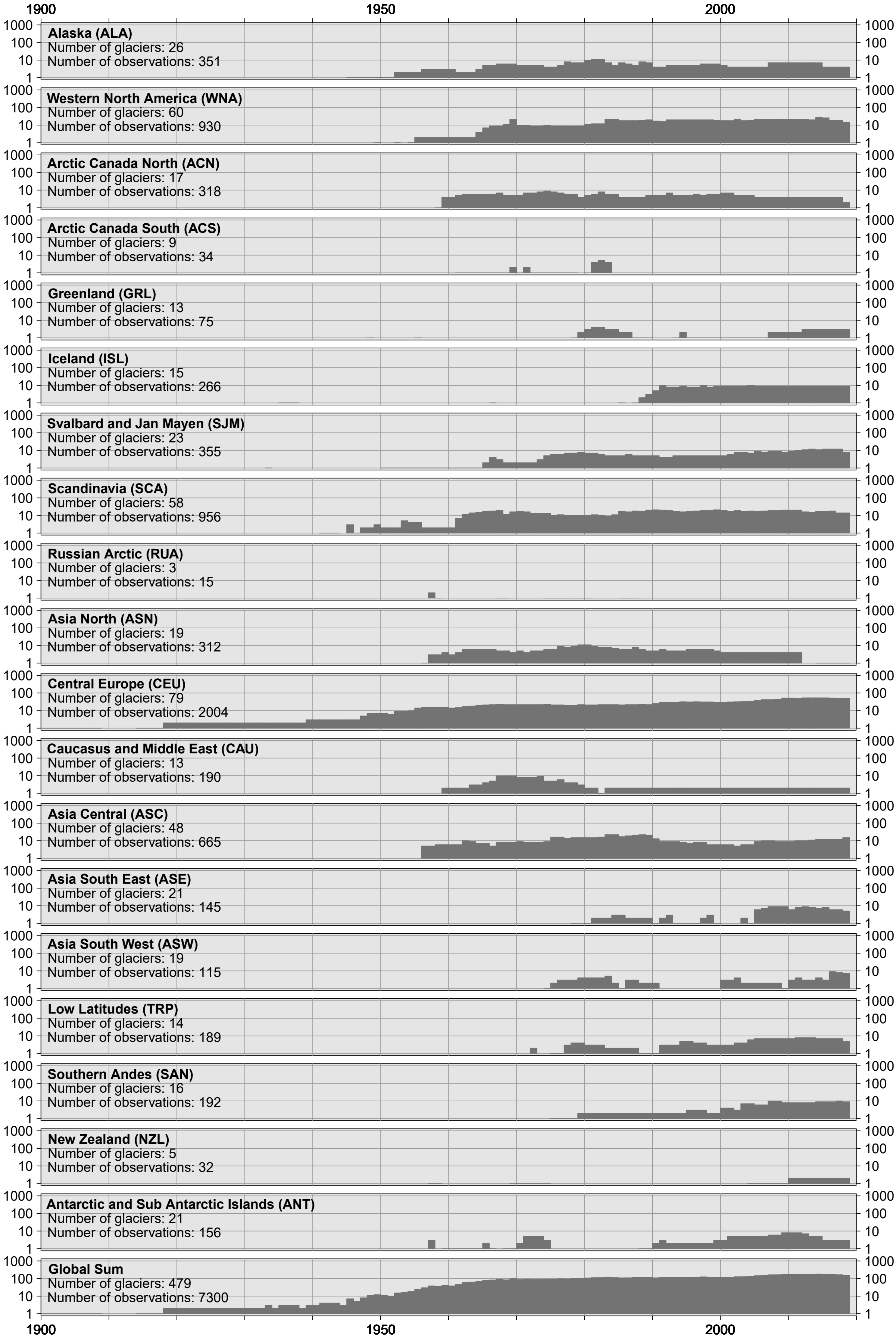


Figure 2.6 Regional and global number of glaciers with glaciological mass-balance data from 1900–2019.

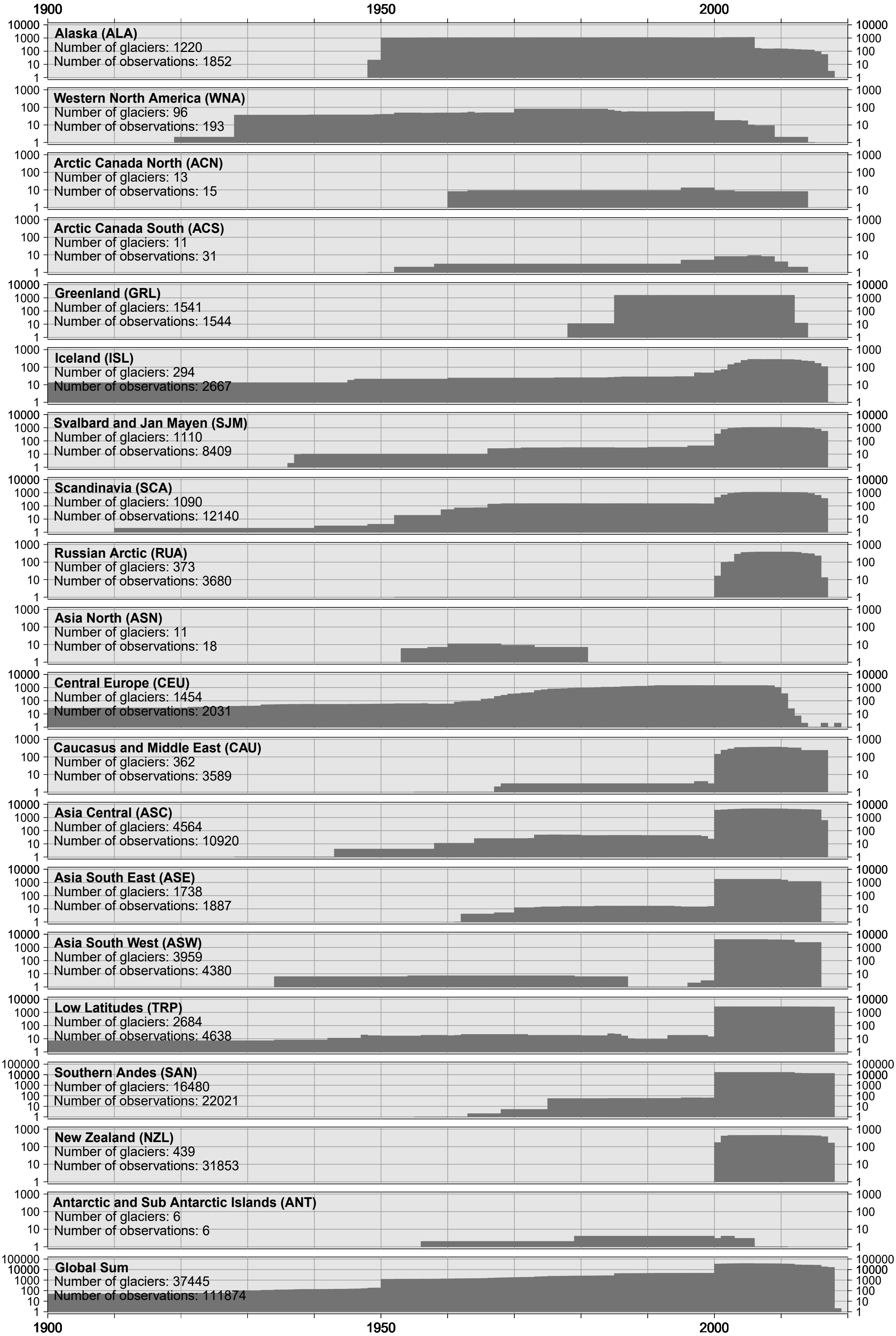


Figure 2.7 Regional and global number of glaciers with geodetic mass-change data from 1900–2019.

3 REGIONAL INFORMATION

Fluctuations of glaciers (not influenced by surge or calving dynamics) are recognized as high-confidence climate indicators and as an important element in early detection strategies within the international climate monitoring programmes (GCOS, 2010; GTOS, 2009). Their fluctuations can be analyzed on global and regional scales, but also on the local scale, where topographic effects may lead to different reactions of two adjacent glaciers (Kuhn et al., 1985). The sensitivity of a glacier to climatic change is strongly related to the climate regime in which the glacier resides. The mass balance of temperate glaciers in the mid-latitudes is mainly dependent on winter precipitation, summer temperature and summer snowfalls (temporally reducing the melt due to the increased albedo; Kuhn et al., 1999). In contrast, the glaciers in low latitudes, where ablation occurs throughout the year and multiple accumulation seasons exist, are strongly influenced by variations in the atmospheric moisture content which affects incoming solar radiation, precipitation and albedo, atmospheric long-wave emission, and sublimation (Wagnon et al., 2001; Kaser & Osmaston, 2002). In the Himalaya, which is influenced by the monsoon, most of the accumulation and ablation occurs during the summer (Ageta & Fujita, 1996; Fujita & Ageta, 2000). Glaciers at high altitudes and in polar regions can experience accumulation in any season (Chinn, 1985). The challenges of fieldwork in these different regions and climate regimes are summarized and contrasted by Stumm et al. (2017).

For regional analysis and comparison of glacier fluctuation data, it is convenient to group glaciers by proximity. We refer to the glacier regions as jointly defined by the GTN-G Advisory Board, GLIMS, the Randolph Glacier Inventory Working Group of IACS, and the WGMS (GTN-G, 2017). For global studies of mass balance, these glacier regions seem to be appropriate because of their manageable number and their geographical extent, which is close to the spatial correlation distance of glacier mass-balance variability in most regions (several hundred kilometres; cf. Letreguilly & Reynaud, 1990; Cogley & Adams, 1998). For every region, all data records are aggregated at the annual time resolution to give consideration to the corresponding observational peculiarities, i.e., for multi-annual survey periods, the annual change rate is calculated and assigned to each year of the survey period. For quantitative comparisons over time and between regions, decadal arithmetic mean mass balances are calculated to reduce the influence of meteorological extremes and of density conversion issues (cf. Huss, 2013). Global values are calculated as arithmetic means of the regional averages to avoid a bias in favour of regions with large observation densities (e.g. in Central Europe, Scandinavia, or Svalbard). This approach is suitable for assessing the temporal variability of glacier mass balance (Zemp et al., 2015).

This chapter provides regional overviews including a figure showing regional averages of glaciological and geodetic mass balances. Glaciological observations were reported by the Principal Investigators or compiled from the literature (e.g. Cogley, 2009; Dyurgerov & Meier, 2005). Geodetic data were compiled from global (Zemp et al., 2019) and regional assessments (as cited in the following sections) and integrated into the Fluctuations of Glaciers database with the support of corresponding researchers. Additional data were compiled from the literature. These geodetic results are shown together with the corresponding number of observations, key statistics on regional glacier distribution and available fluctuation series, as well as graphs of cumulative front variation and mass balance from selected glaciers with long-term observation series. Note that for cumulative graphs with observational gaps the absolute change over the full time period is unknown. The regions are ordered approximately from West to East and from North to South. Regional estimates of total glacier area, rounded out to the next 500 km^2 mark, are from the RGI 6.0 (RGI Consortium, 2017).

3.1 ALASKA

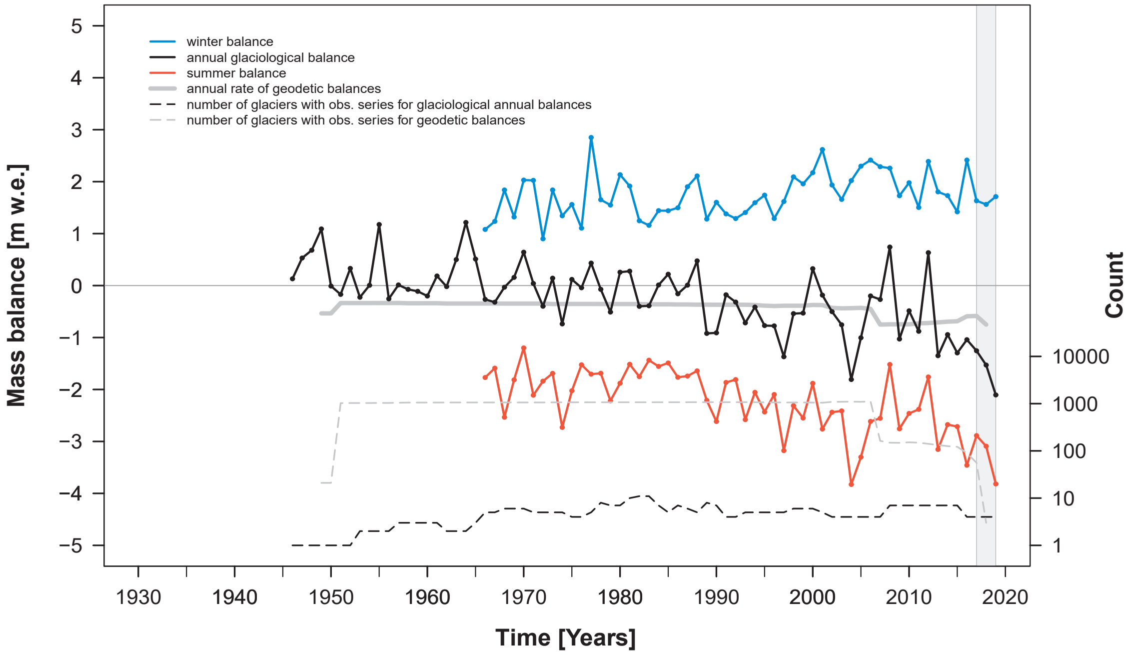


Figure 3.1.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The glaciers and icefields of Alaska are located in the Brooks Range, the Alaska Range, where Mount McKinley/Denali (the highest peak of the continent) is located, and in the Coast Mountains along the Gulf of Alaska coastline. Together these glaciers cover an area of about 86,500 km^2. Climate conditions in this region range from very maritime conditions in the Coast Mountains to continental conditions in the Alaska Range. In Alaska, the major part of the front-variation series was discontinued at the end of the 20th century. Long-term mass-balance measurements have been reported from Gulkana and Wolverine in the Alaska Range as well as from the Juneau Icefield's Taku and Lemon Creek glaciers located in southeast Alaska.

In Alaska, glaciers reached their Little Ice Age (LIA) maxima at various times; for the northeast Brooks Range it was the late 15th century, and for the Kenai Mountains, the mid-17th century (Grove, 2004). However, most of the glaciers attained the LIA maximum extent between the early 18th and late 19th centuries (Molnia, 2007). Reported front-variation observations show a general glacier retreat from the LIA extents. Exceptions to this general trend are large tidewater glaciers with impressive frontal retreat (e.g. Columbia No 627) and advance (e.g. Harvard, Taku) cycles, mainly driven by calving dynamics. The former tidewater glacier Muir, located in the Saint Elias Mountains, became a land-terminating glacier after its last retreat phase. Observed mass-balance glaciers lost about half a metre w.e. per year during the 1990s and 2000s, with three years of positive mean balances in 1999/00, 2007/08, and 2011/12. Seasonal balance observations show the large mass turnover of the maritime glaciers. In 2017/18 the reported balance was negative with –1,530 mm w.e. a^{-1} followed by a very negative balance of –2,105 mm w.e. a^{-1} in 2018/19. The glaciological measurements are supported by results from geodetic surveys from about 1,200 glaciers between the 1950s and the 2000s. Regional glacier change assessments were recently published by Berthier et al. (2018), Jakob et al. (2020), Larsen et al. (2015), Le Bris & Paul (2015), McNabb & Hock (2014), McNeil et al. (2020), O'Neel et al. (2019), and Yang et al. (2020).

Estimated total glacier area (km^2):	86,500
Front variations	
- # of series*:	136/1
- # of obs. from stat. or adv. glaciers*:	212/0
- # of obs. from retreating glaciers*:	382/1
Glaciological balances	
- # of series*:	26/4
- # of observations*:	355/8
Geodetic balances	
- # of series°:	1,220/154
- # of observations°:	1,852/544

* (total/2018 & 2019), ° (total/>2009)

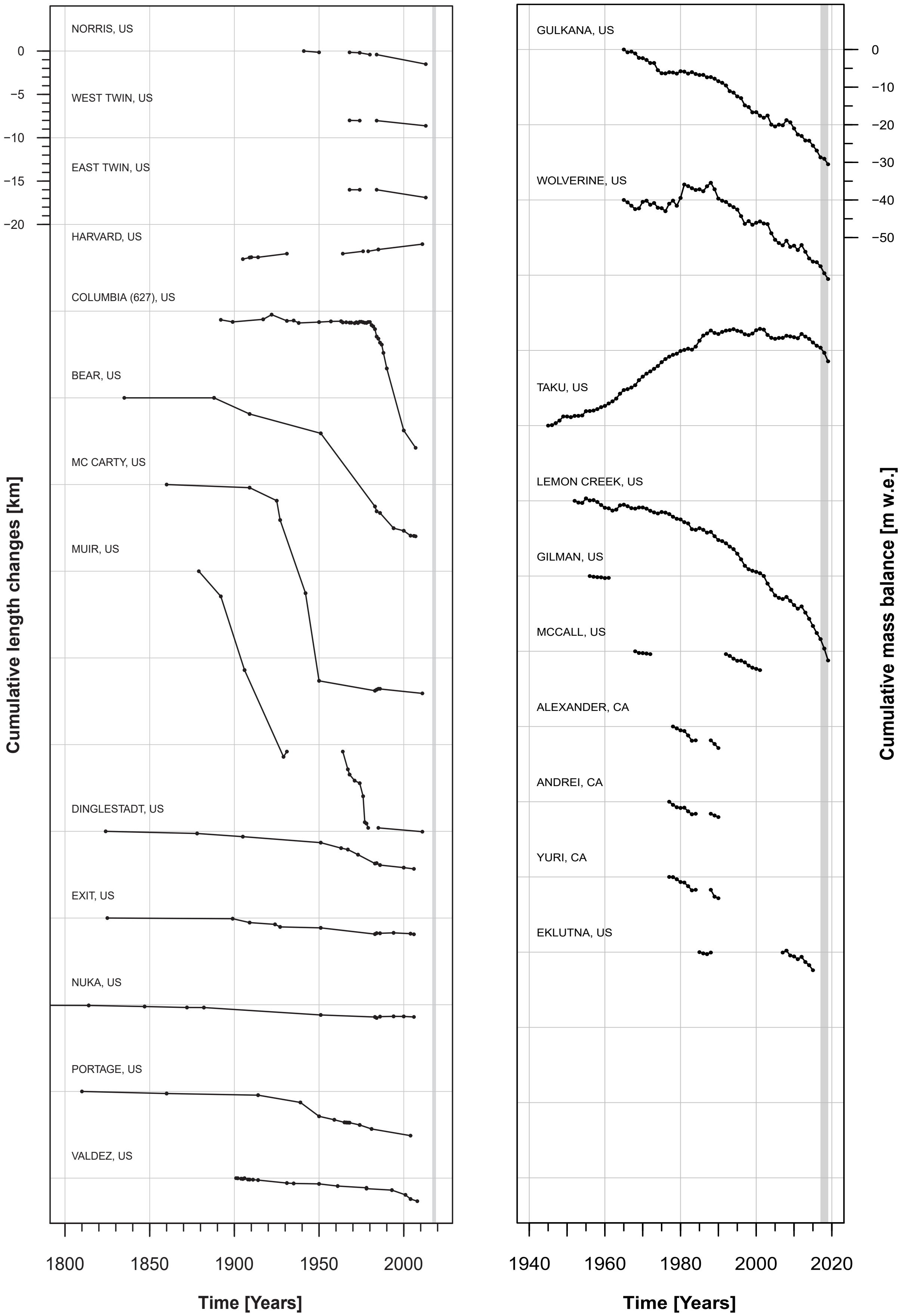


Figure 3.1.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Alaska over the entire observation period.

3.2 WESTERN NORTH AMERICA

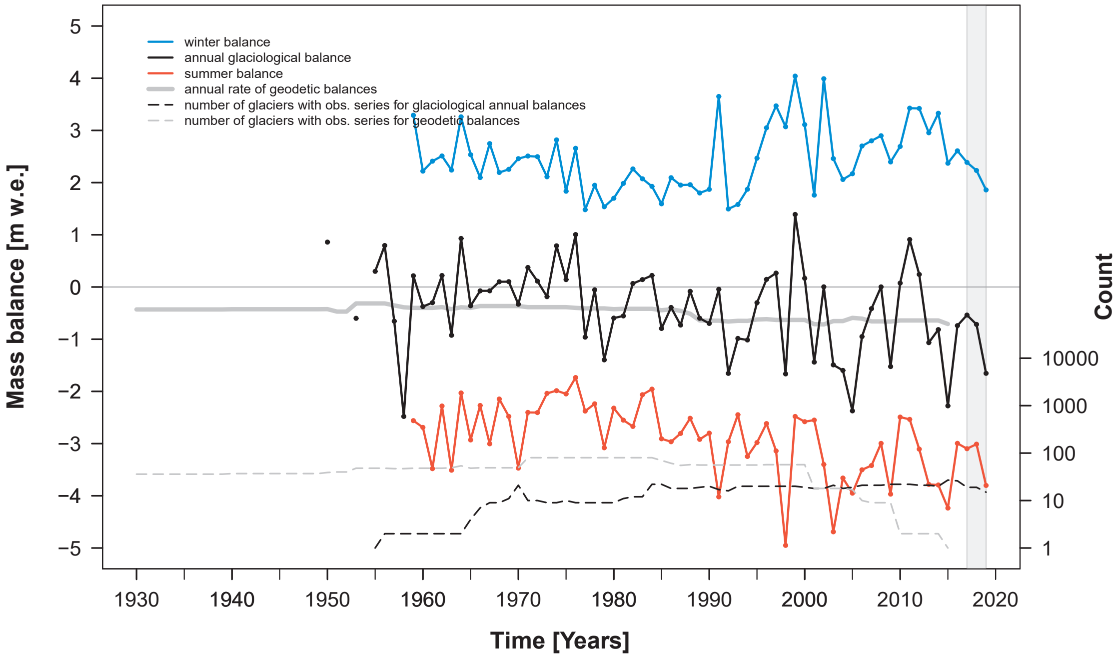


Figure 3.2.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The glaciers in Western North America are located in the Pacific Coast Mountains, the Rocky Mountains, the Cascade Range, and in the Sierre Nevada. Together, the glacier area covers a total of approx. 14,500 km^2. In general, the climate of the mountain ranges shows strong variations depending on latitude, altitude and proximity to the sea. Therefore, glaciers in the south are much smaller and occur at higher elevations than in the higher latitudes, where some glaciers extend down to the coast.

From western North America more than 50 mass balance and more than 120 front-variation series are available but only half of them have been continued into the 21st century. South Cascade Glacier in the Cascade Range has the longest mass-balance record followed by Place and Helm glaciers in the Coast Mountains and Peyto Glacier in the Rocky Mountains. In conterminous USA and Canada, glaciers reached their LIA maximum extent in the mid to late 19th century (Kaufmann et al., 2004). Reported front variations show a general glacier retreat from the LIA extents with intermittent periods of glacier re-advances in the early 20th century and from the 1970s to 1980s. Since the 1990s glacier retreat has been continued.

Mean annual balance rates of the observed glaciers were between 400 and 450 mm w.e. a^{-1} in the 1980s and 1990s, and almost –1000 mm w.e. a^{-1} in the 2000s. Seasonal balance observations show the large mass turnover of the maritime glaciers. The reported mean annual balance of 2017/18 was negative with –717 mm w.e. followed by a very negative mean annual balance of –1,654 mm w.e. in 2018/19. The glaciological observations are well supported by results from the limited sample of geodetic surveys.

Regional glacier change assessments were recently published by Menounos et al. (2019), Pelto (2018), Pelto & Brown (2012), Shea et al. (2013), Tennant & Menounos (2013), and Tennant et al. (2012).

Estimated total glacier area (km^2):	14,500
Front variations	
- # of series*:	125/13
- # of obs. from stat. or adv. glaciers*:	284/0
- # of obs. from retreating glaciers*:	827/21
Glaciological balances	
- # of series*:	60/19
- # of observations*:	940/34
Geodetic balances	
- # of series°:	96/2
- # of observations°:	193/9

* (total/2018 & 2019), ° (total/>2009)

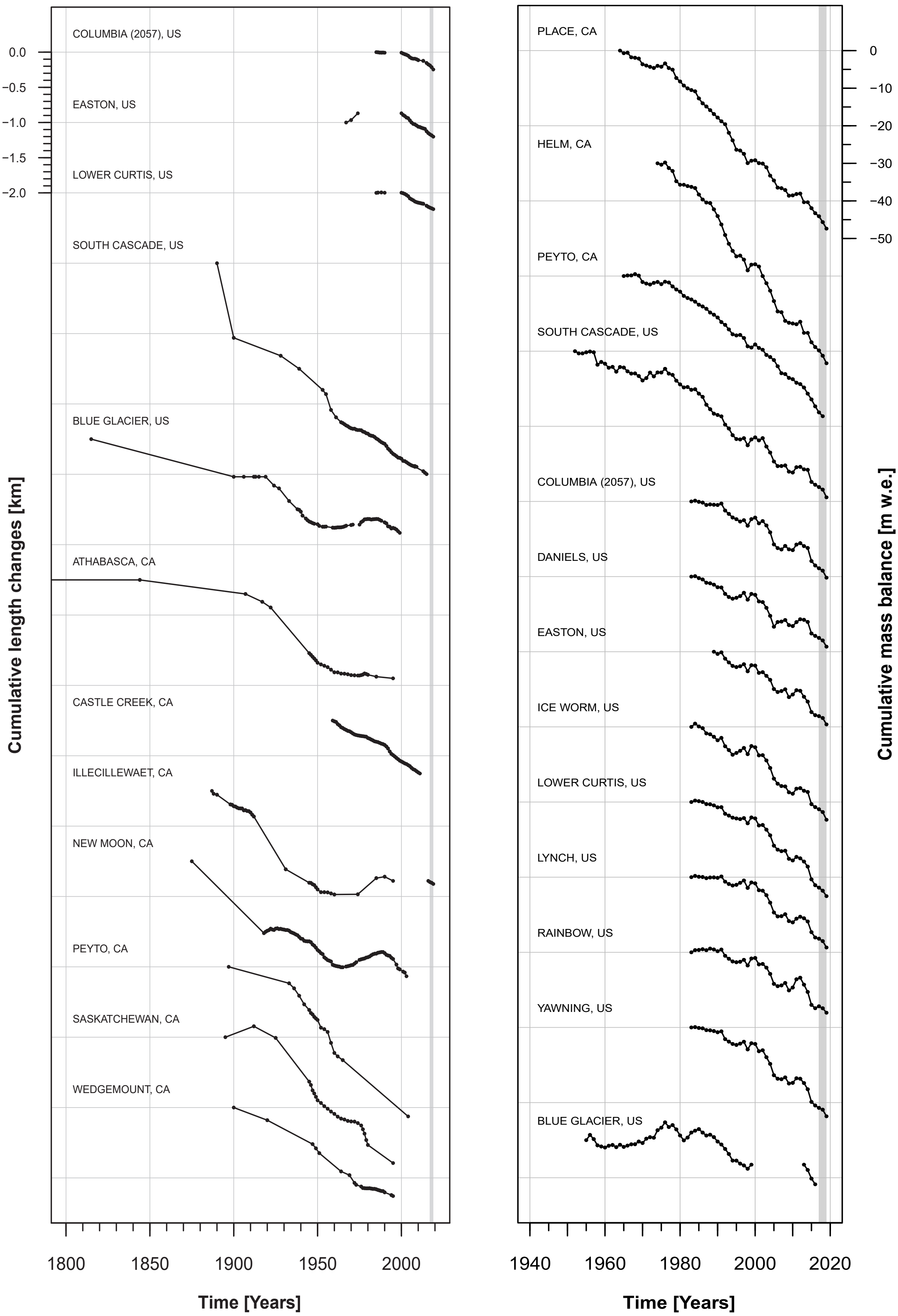


Figure 3.2.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Western North America over the entire observation period.

3.3 ARCTIC CANADA NORTH & SOUTH

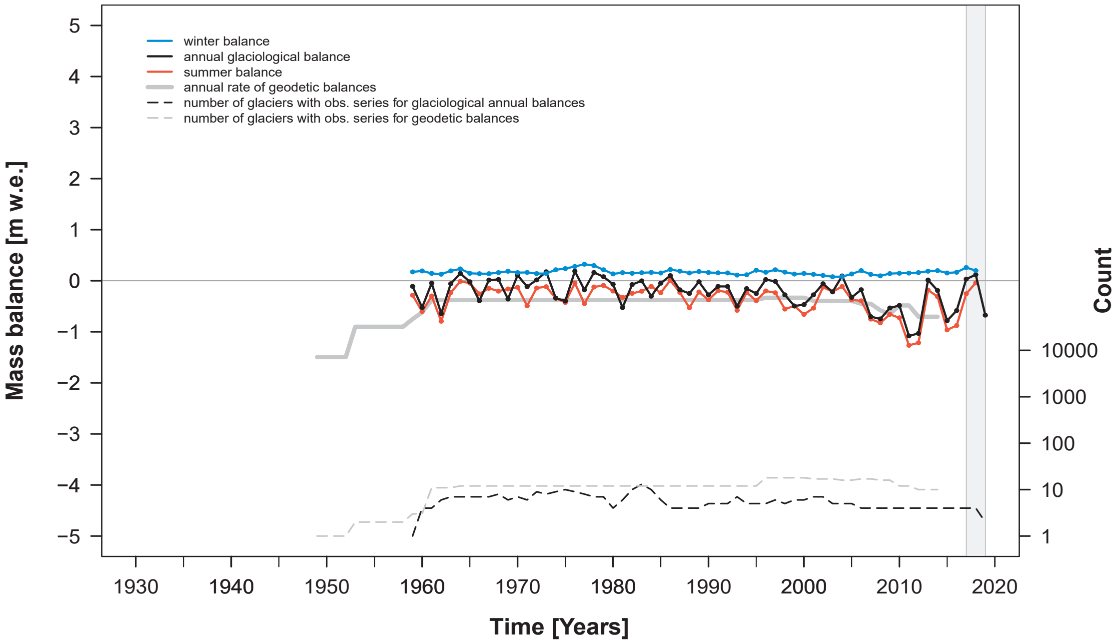


Figure 3.3.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The Canadian Arctic Archipelago is a group of more than 36,000 islands and hosts a total of about 146,000 km^2 of glaciers, icefields and ice caps. The largest islands with glaciers are Baffin, Ellesmere, Devon, Axel Heiberg, and Melville. The glaciers in this high-latitude region are much influenced by the extent and distribution of sea ice which in turn depends on ocean currents and on the Arctic and North Atlantic Oscillations.

Information on glacier changes mainly stems from a few dozen mass-balance series. The longest continuous measurements are reported from Meighen, Devon and Melville Ice Caps and from White Glacier. The long-term glaciological measurement series of White Glacier has recently been homogenized and validated with geodetic surveys by Thomson et al. (2017).

The timing of the LIA maximum extent of glaciers in the Canadian Artic Archipelago is estimated to the end of the 19th century (Grove, 2004). The subsequent glacier retreat is clearly visible in remotely sensed images thanks to glacier moraines and trimlines. However, detailed front-variation observations are not available for this region.

The few reported mass-balance measurements indicate slightly negative balances of less than 100 mm w.e. a^{-1} between the 1960s and the 1980s and an increased mass loss between –200 and –300 mm w.e. a^{-1} in the 1990s and 2000s. Seasonal balances show the small mass turnover of the Arctic ice caps. In Arctic Canada North, the reported mean annual balance of 2017/18 was positive with 118 mm w.e. and negative with –674 mm w.e. in 2018/19.

The few available results from geodetic surveys are also indicating negative balances over the second half of the 20th century but relate to a different glacier sample. Regional glacier change assessments were recently published by Noël et al. (2018).

Estimated total glacier area (km^2):	146,000
Front variations	
- # of series*:	7/0
- # of obs. from stat. or adv. glaciers*:	17/0
- # of obs. from retreating glaciers*:	37/0
Glaciological balances	
- # of series*:	26/4
- # of observations*:	354/6
Geodetic balances	
- # of series°:	24/12
- # of observations°:	46/18

* (total/2018 & 2019), ° (total/>2009)

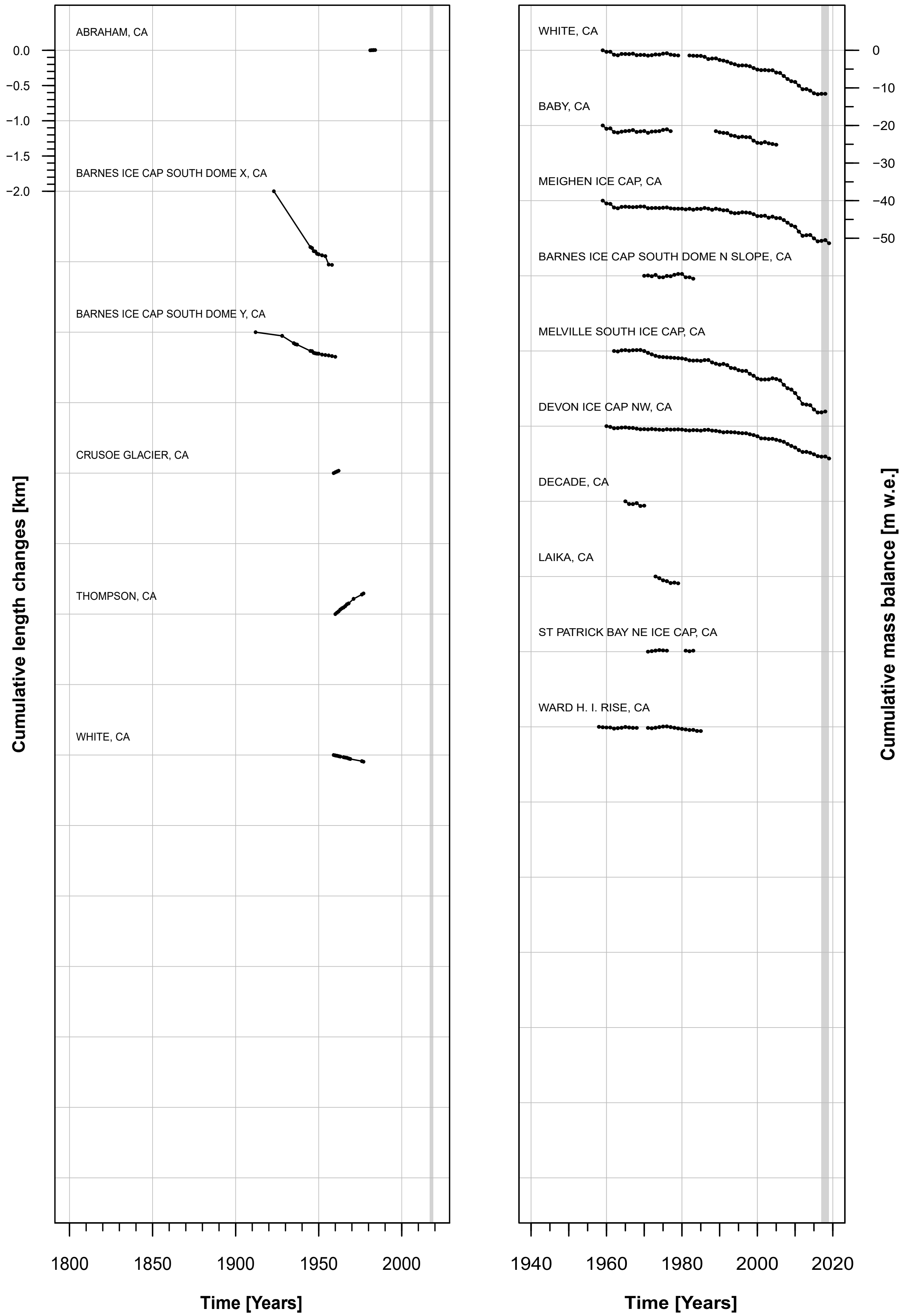


Figure 3.3.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Arctic Canada over the entire observation period.

3.4 GREENLAND

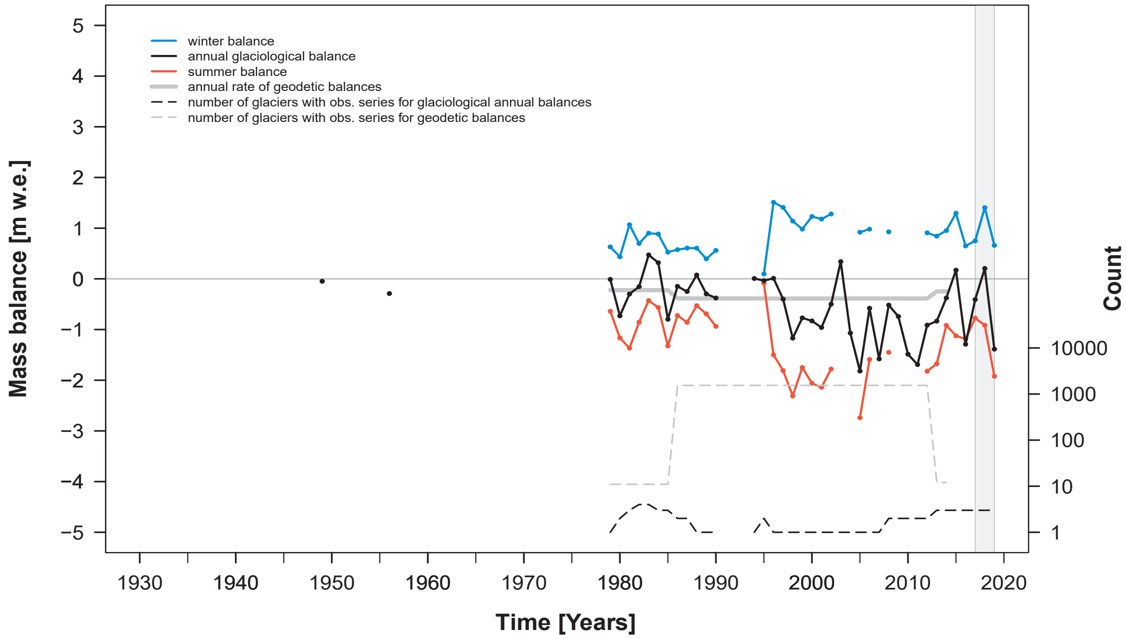


Figure 3.4.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The world's largest non-continental island is covered to about 80% by the Greenland Ice Sheet. In addition, about 20,300 local glaciers cover an area between 90,000 km² and 130,000 km², depending on the counting of different connectivity levels between local glaciers and the ice sheet (Rastner et al., 2012). These glaciers range from sea level to 3,694 m a.s.l. at Gunnbjørn Fjeld – Greenland's highest mountain located in the Watkins Range on the east coast.
There exists a large variety of glacier types, from icefields and ice caps with numerous outlet glaciers, to valley, mountain and cirque glaciers. The island acts as a centre of cooling resulting in a polar to subpolar climate regime. Due to the large north-south extent, different thermal regimes can be expected for the glaciers, ranging from mostly cold in the north to polythermal in the central part to temperate in the south. About 80 front-variation series are available from the southern part. Mass-balance measurements are available from about 25 sites, but most series are discontinued after a couple of years. Recent measurements are reported from Mittivakkat and Freya, both located on the east coast and Qasigiannguit on the west coast. The few investigations from Greenland indicate that many glaciers and ice caps (e.g. on Disko Island) reached their maximum extents before the 19th century. The subsequent glacier retreat is documented at about decadal intervals for approx. 80 glaciers in the southern part of Greenland. However, observations made after 2010 have been reported only from Mittivakkat Glacier.

Mass-balance measurements indicate that the ice loss increased from –630 mm w.e. a^{-1} in the 1990s to –890 mm w.e. a^{-1} in the 2000s. The reported mean annual balance of 2017/18 was postitive with 205 mm w.e. and very negative with –1,387 mm w.e. for 2018/19.

Regional glacier change assessments were published by Bjørk et al. (2012), Bolch et al. (2013), Citterio et al. (2009), and Machguth et al. (2016). Huber et al. (2020) show a geodetic mass-change of –0.5 m a^{-1} for west-central Greenland from 1985 to 2012.

Estimated total glacier area (km²):	89,500
Front variations	
- # of series*:	89/1
- # of obs. from stat. or adv. glaciers*:	119/0
- # of obs. from retreating glaciers*:	396/1
Glaciological balances	
- # of series*:	13/3
- # of observations*:	75/6
Geodetic balances	
- # of series°:	1,541/1,540
- # of observations°:	1,544/1,541

* (total/2018 & 2019), ° (total/>2009)

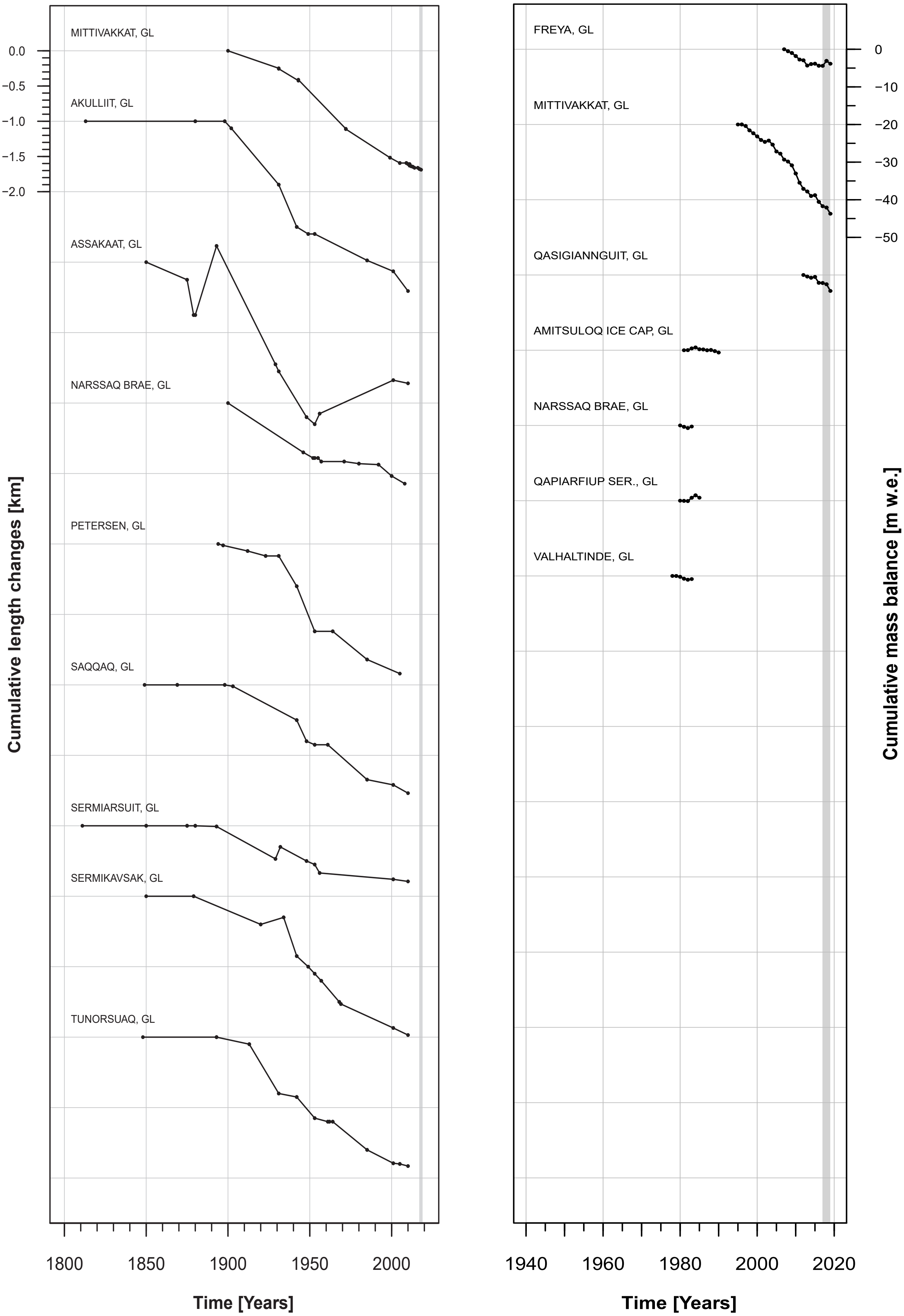


Figure 3.4.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Greenland over the entire observation period.

3.5 ICELAND

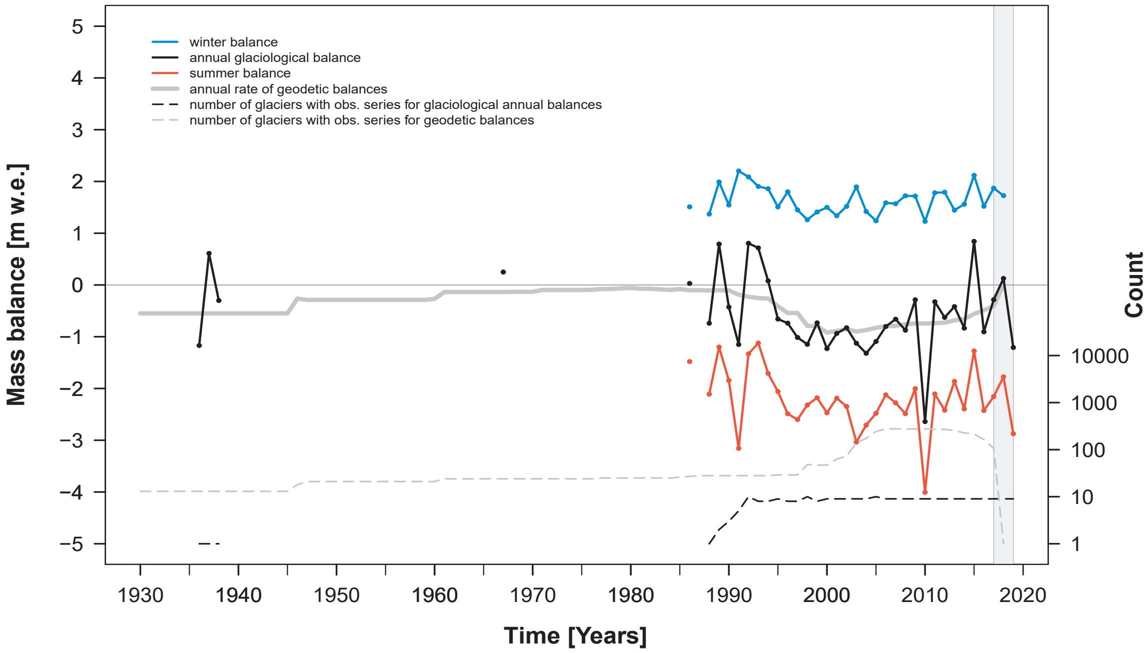


Figure 3.5.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

Iceland is located on the Mid-Atlantic Ridge and its ice cover is dominated by six large ice caps. Vatnajökull is the largest followed by Langjökull, Hofsjökull, Mýrdalsjökull, Drangajökull, and Eyjafjallajökull. The entire glacier cover is estimated to total close to 11,000 km^2.

The glaciers in Iceland are located in a region of subpolar oceanic climate. The warm North Atlantic Current ensures generally higher temperatures than in most places of similar latitude. Winter precipitation and summer ablation levels on the glaciers are comparatively high and the mass-balance sensitivity is among the highest recorded. Many ice caps and glaciers in Iceland are influenced by geothermal and volcanic activity, resulting in frequent glacier outburst floods, known in Icelandic as jökulhlaups.

Mass-balance measurements are available from a dozen glaciers. The longest series starting in 1988 is from outlet glaciers of Hofsjökull. Measurements on Vatnajökull outlets and on Langjökull were started in 1991 and 1997, respectively. Detailed front-variation series are available from over 70 glacier tongues reaching back to the 1930s, with sporadic information derived from historical sources back to the 18th century and in a few cases even further back in time.

The maximum LIA extent is estimated to have occurred close to the end of the 19th century (Thorarinsson, 1943; Sigurðsson, 2005). Detailed front-variation observations document the general retreat from the LIA maximum extent up to 1970, with a period of intermittent re-advance between 1970 and 1990 and continued retreat from 1995 to the present time. Abrupt re-advances are due to surges.

The average mass loss of glaciers has increased from about –500 mm w.e. a^{-1} in the 1990s to more than –1,000 mm w.e. a^{-1} in the 2000s. The average mass balance during the glaciological year 2017/18 was positive with 127 mm w.e., followed by a quite negative mass balance of –1,208 mm w.e. in 2018/19.

Regional glacier change assessments were recently published by Aðalgeirsdóttir et al. (2020), Belart et al. (2020), Björnsson et al. (2013), Foresta et al. (2016), Hannesdottir et al. (2015), Jóhannesson et al. (2020), and Pope et al. (2016).

Estimated total glacier area (km^2):	11,000
Front variations	
- # of series*:	76/43
- # of obs. from stat. or adv. glaciers*:	792/9
- # of obs. from retreating glaciers*:	2,379/60
Glaciological balances	
- # of series*:	16/9
- # of observations*:	276/18
Geodetic balances	
- # of series°:	294/280
- # of observations°:	2,667/2,511

* (total/2018 & 2019), ° (total/>2009)

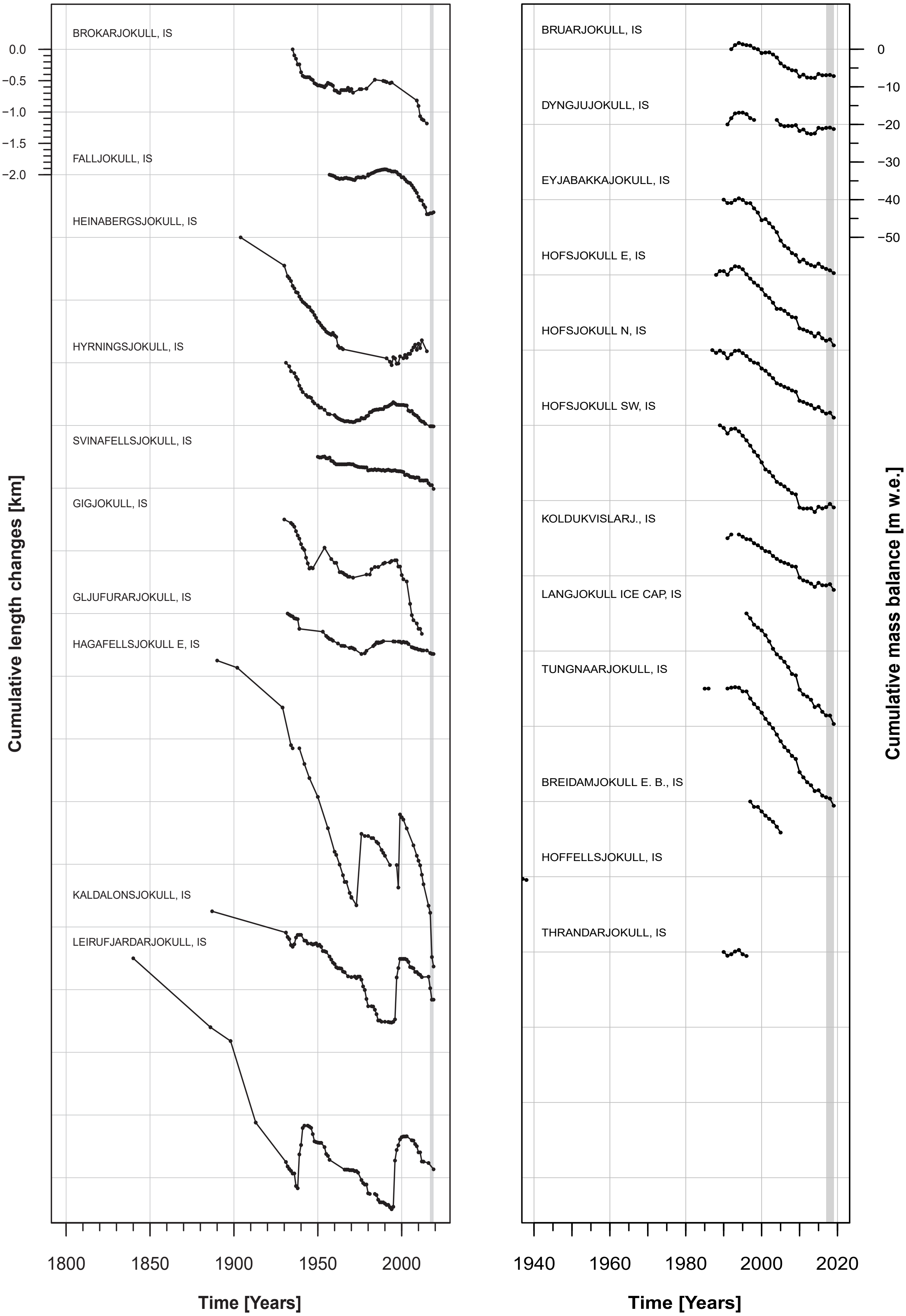


Figure 3.5.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Iceland over the entire observation period.

3.6 SVALBARD & JAN MAYEN

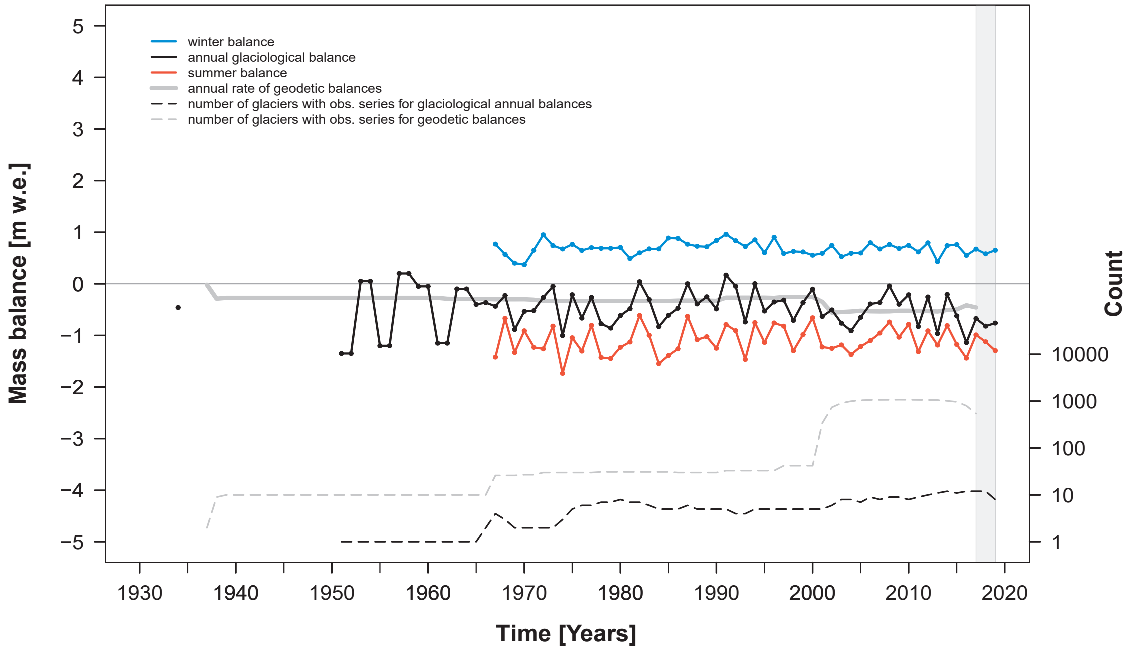


Figure 3.6.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The Svalbard Archipelago is situated in the Arctic Ocean north of mainland Europe. The largest island is Spitsbergen, followed by Nordaustlandet and Edgeøya. Its topography is more than half covered by ice, and is characterized by plateau mountains and fjords. The entire glacier area totals about 34,000 km². Jan Mayen is a volcanic island in the Arctic Ocean and is part of the Kingdom of Norway, as is Svalbard. It is partly covered by glaciers, with an area of about 100 km² around the Beerenberg Volcano. Svalbard and Jan Mayen both have an arctic climate, although with much higher temperatures than other regions at the same latitude. Numerous glaciers on Svalbard are of the surge-type.

Over 20 continuous mass-balance series are reported from Svalbard, the longest ones being from Austre Brøggerbreen, Midtre Lovenbreen, Kongsvegen, Hansbreen, and Waldemarbreen. Front variations are available from roughly 30 glaciers, most of them dating back to about 1900. From Jan Mayen, front variations are reported from Sorbreen.

During the LIA, glaciers in Svalbard were close to their late Holocene maximum extent and remained there until the beginning of the 20th century (Svendsen & Magerud, 1997). The reported front-variation series show a general trend of retreat without a common period of distinct re-advances. On Jan Mayen, Sorbreen shows a retreat starting in the late 19th century with a re-advance period in the mid-20th century.

Glaciological mass-balance measurements indicate continued ice loss at a rate of a few hundred mm w.e. per year over the second half of the 20th century, well supported by results from geodetic survey of a few dozen glaciers. Mass loss increased to –490 mm w.e. a^{-1} in the 2000s. Seasonal balances show a relatively low mass turnover. The average mass balance of 2017/18 was –820 mm w.e. and –761 mm w.e. in 2018/19. Regional glacier change assessments were recently published by Morris et al. (2020), Schuler et al. (2020), and Sobota (2013, 2021).

Estimated total glacier area (km²):	34,000
Front variations	
- # of series*:	27/2
- # of obs. from stat. or adv. glaciers*:	35/2
- # of obs. from retreating glaciers*:	157/1
Glaciological balances	
- # of series*:	23/12
- # of observations*:	358/20
Geodetic balances	
- # of series°:	1,110/1,068
- # of observations°:	8,409/8,206

* (total/2018 & 2019), ° (total/>2009)

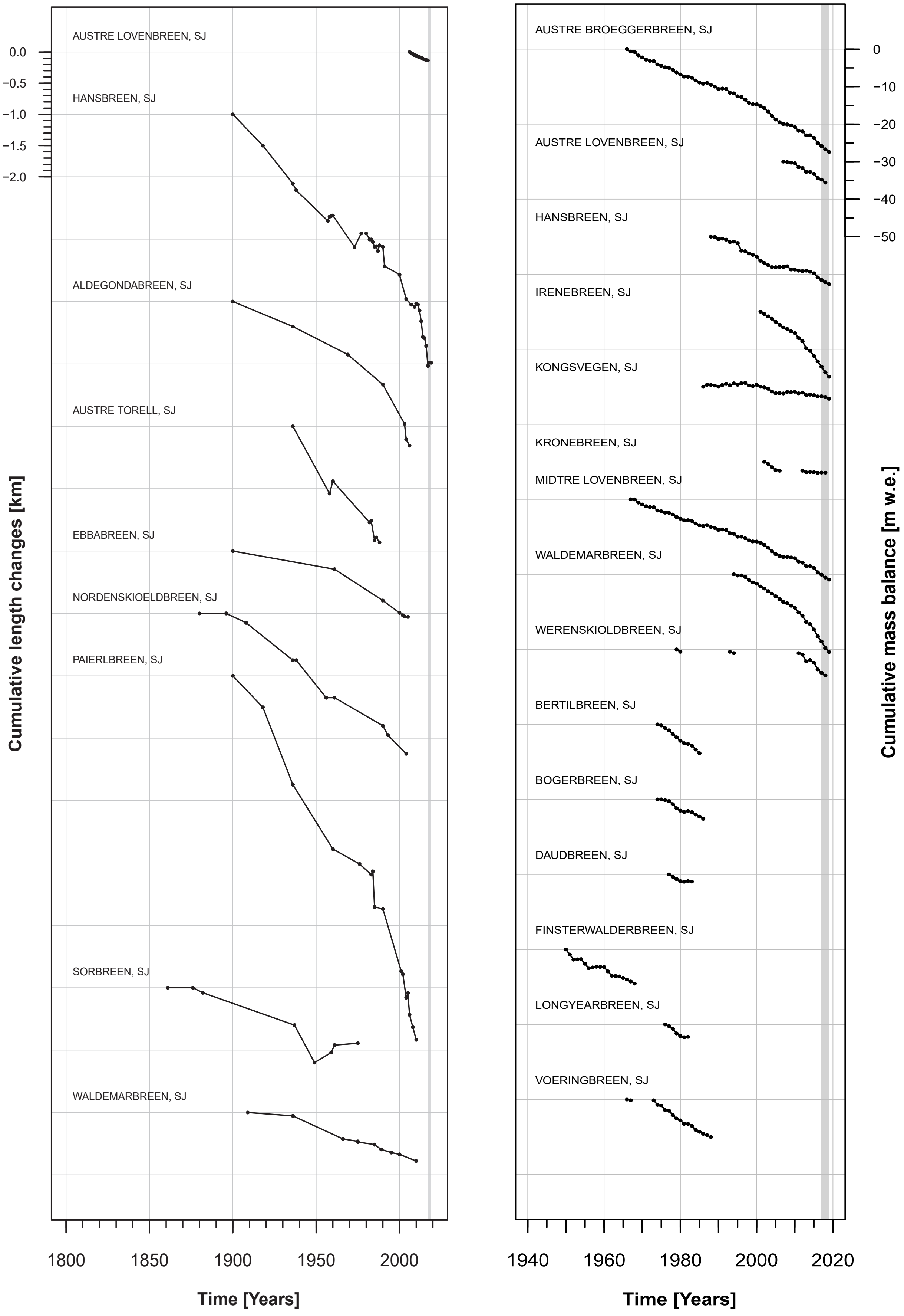


Figure 3.6.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Svalbard and Jan Mayen over the entire observation period.

3.7 SCANDINAVIA

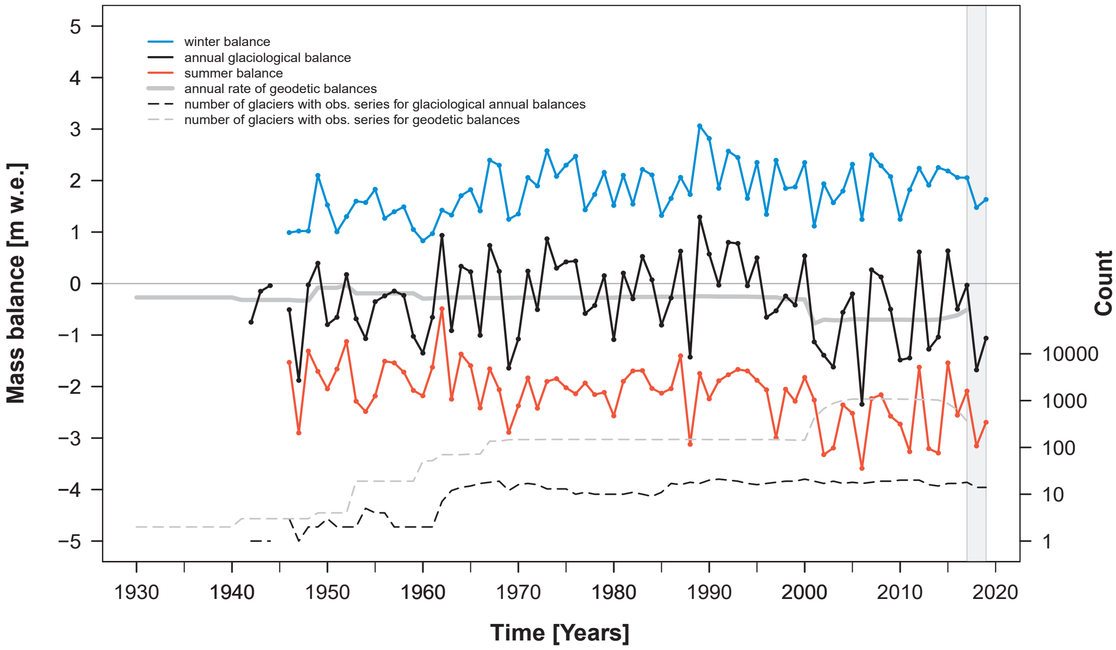


Figure 3.7.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

In Scandinavia, the greater part of the ice cover is concentrated in southern Norway, namely in Folgefonna, Hardangerjøkulen, Breheimen, Jotunheimen, and Jostedalsbreen, which is the largest ice cap of mainland Europe. In northern Norway there are the Okstindan and Svartisen ice caps, glaciers in Lyngen and Skjomen as well as in the adjacent Kebnekaise region in Sweden. Together, these glaciers cover about 3,000 km^2. Glaciers are situated in different climatic regimes, ranging from maritime along the Norwegian west coast, humid continental in the central part, to subarctic further north.

Scandinavia is one of the regions with the most and longest reported observation series. From the approx. 60 mass balance series, eight have continuously reported series since 1970; those in Norway have recently been reanalysed by Andreassen et al. (2016). Front-variations series are available from almost 90 glaciers extending back to the 19th century, with some reconstructions even back to the 17th century.

After having disappeared most likely during the early/mid-Holocene (Nesje et al., 2008), most of the Scandinavian glaciers reached their LIA maximum extent in the mid-18th century (Grove, 2004). Following a minor retreat trend with small frontal oscillations up until the late 19th century, the glaciers experienced a general recession during the 20th century with intermittent periods of re-advances around 1910 and 1930, in the 1970s, and around 1990; the last advance stopped at the beginning of the 21st century. On average, the observed mass balances were slightly positive from the 1970s to the 1990s. This was because coastal glaciers were able to gain mass while the glaciers further inland continued to lose mass. Geodetic results are well centred within the variability of the glaciological results with slightly negative average balances. After 2000, glaciers in both the coastal and the inland region lost mass resulting in an average balance of –790 mm w.e. a^{-1}. Seasonal balances show a large mass turnover. The regional average of reported balances was negative with –1,677 mm w.e. in 2017/18 and –1,061 mm w.e. in 2018/19. Regional glacier change assessments were recently published by Andreassen et al. (2020), Jiao et al. (2020), and NVE (2019, and earlier issues).

Estimated total glacier area (km^2):	3,000
Front variations	
- # of series*:	93/46
- # of obs. from stat. or adv. glaciers*:	749/3
- # of obs. from retreating glaciers*:	2,560/72
Glaciological balances	
- # of series*:	58/14
- # of observations*:	967/28
Geodetic balances	
- # of series°:	1,090/1,076
- # of observations°:	12,140/11,994

* (total/2018 & 2019), ° (total/>2009)

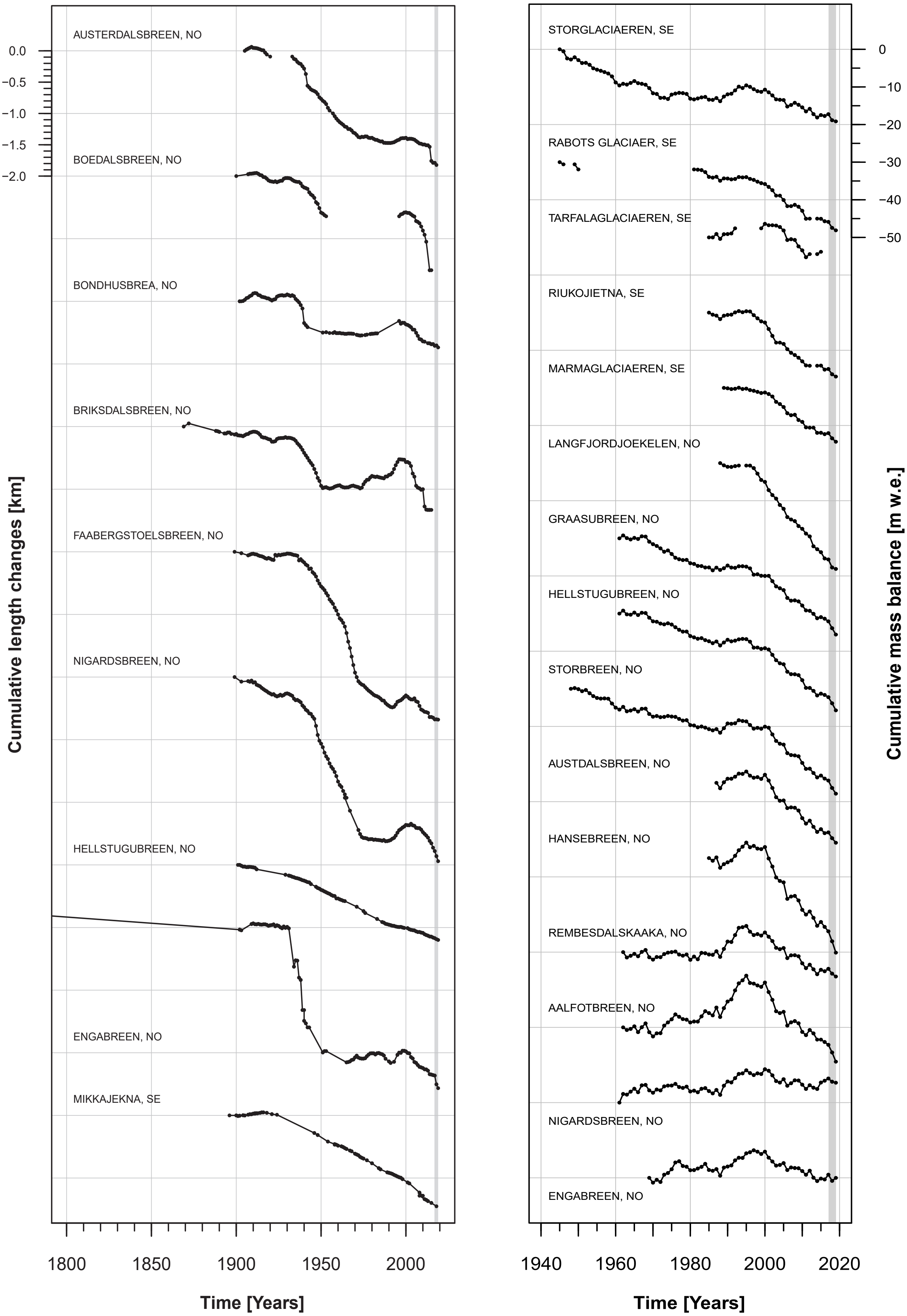


Figure 3.7.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Scandinavia over the entire observation period.

3.8 CENTRAL EUROPE

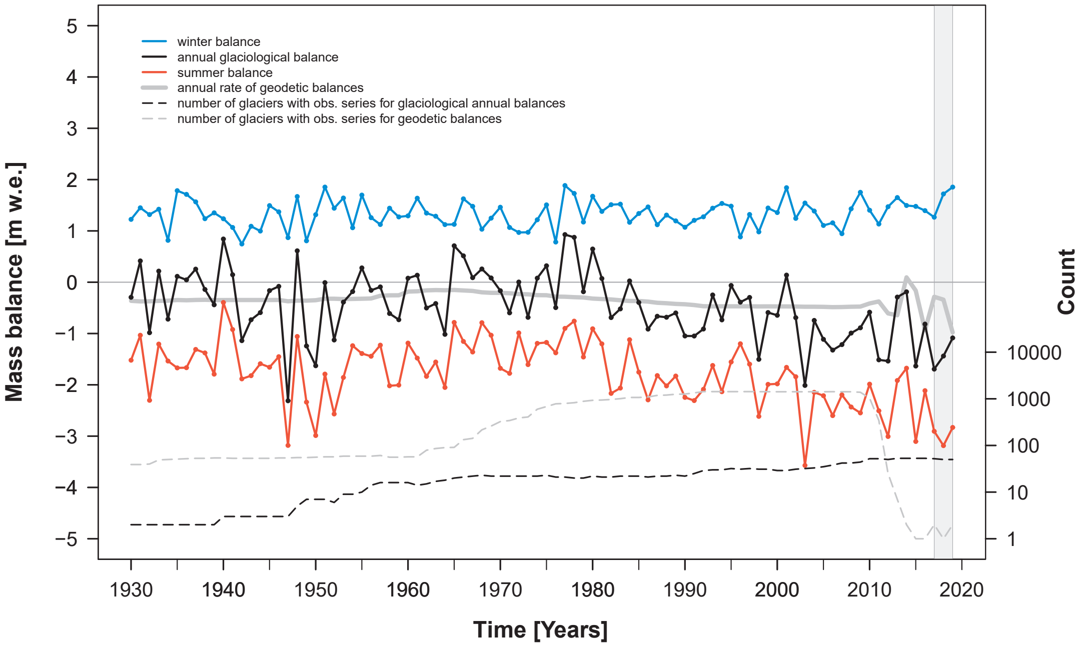


Figure 3.8.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

Central Europe has about 2,000 km² of glacier ice. The major part of it is located in the Alps with Grosser Aletschgletscher as its largest valley glacier. The Alps represent the 'water tower' of Europe and form the watershed of the Mediterranean Sea, the North Sea/North Atlantic Ocean, and the Black Sea. Some smaller glaciers are found in the Pyrenees – a mountain range in southwest Europe which extends from the Bay of Biscay to the Mediterranean Sea. The glaciers are situated in the Maladeta massif in Spain and around the Vignemale peak in France. A few more perennial icefields exist e.g., in the Apennine, Italy, as well as in Slovenia and Poland.

Central Europe has the greatest number of available front-variation and mass-balance measurements, with many long-term series. From the over 60 mass-balance series, ten have been maintained for more than 30 years. Over 700 front-variation series cover the entire Alps, many with more than 100 observation years. In addition, reconstructed front variations are available for a dozen glaciers extending back to the 16th century. About three dozen front-variation series are available from the Pyrenees range, some of them extending back to the 19th century. Mass-balance measurements have been carried out at Maladeta (ES) and Ossoue (FR) glaciers. In the Apennine, long-term measurements are available from Calderone (IT).

Front-variation observations give good documentation of the subsequent retreat with intermittent periods of re-advances in the 1890s, 1920s, and 1970–80s.

Glacier-mass loss accelerated from close to zero balances in the 1960s and 1970s, to –560/–720/–1,030 mm w.e. a^{-1} in the 1980s/1990s/2000s. Glaciological results are well supported by results from geodetic surveys from air-borne (Fischer et al. 2015) and space-borne (Sommer et al., 2020a) surveys.

Seasonal balances show a relatively large mass turnover and a tendency towards more negative summer balances over the past decades. Regional mean balances were negative with –1,439 mm w.e. in 2017/18 and –1,086 mm w.e. in 2018/19. Regional glacier change assessments were recently published by Davaze et al. (2020), GLAMOS (2020), Haeberli et al. (2019), Huss et al. (2015), Lieb & Kellerer-Pirklbauer (2019, and earlier issues), and Žebre et al. (2021).

Estimated total glacier area (km²):	2,000
Front variations	
- # of series*:	739/309
- # of obs. from stat. or adv. glaciers*:	6,921/38
- # of obs. from retreating glaciers*:	23,407/544
Glaciological balances	
- # of series*:	79/50
- # of observations*:	2,025/100
Geodetic balances	
- # of series°:	1,454/1,034
- # of observations°:	2,031/1,053

* (total/2018 & 2019), ° (total/>2009)

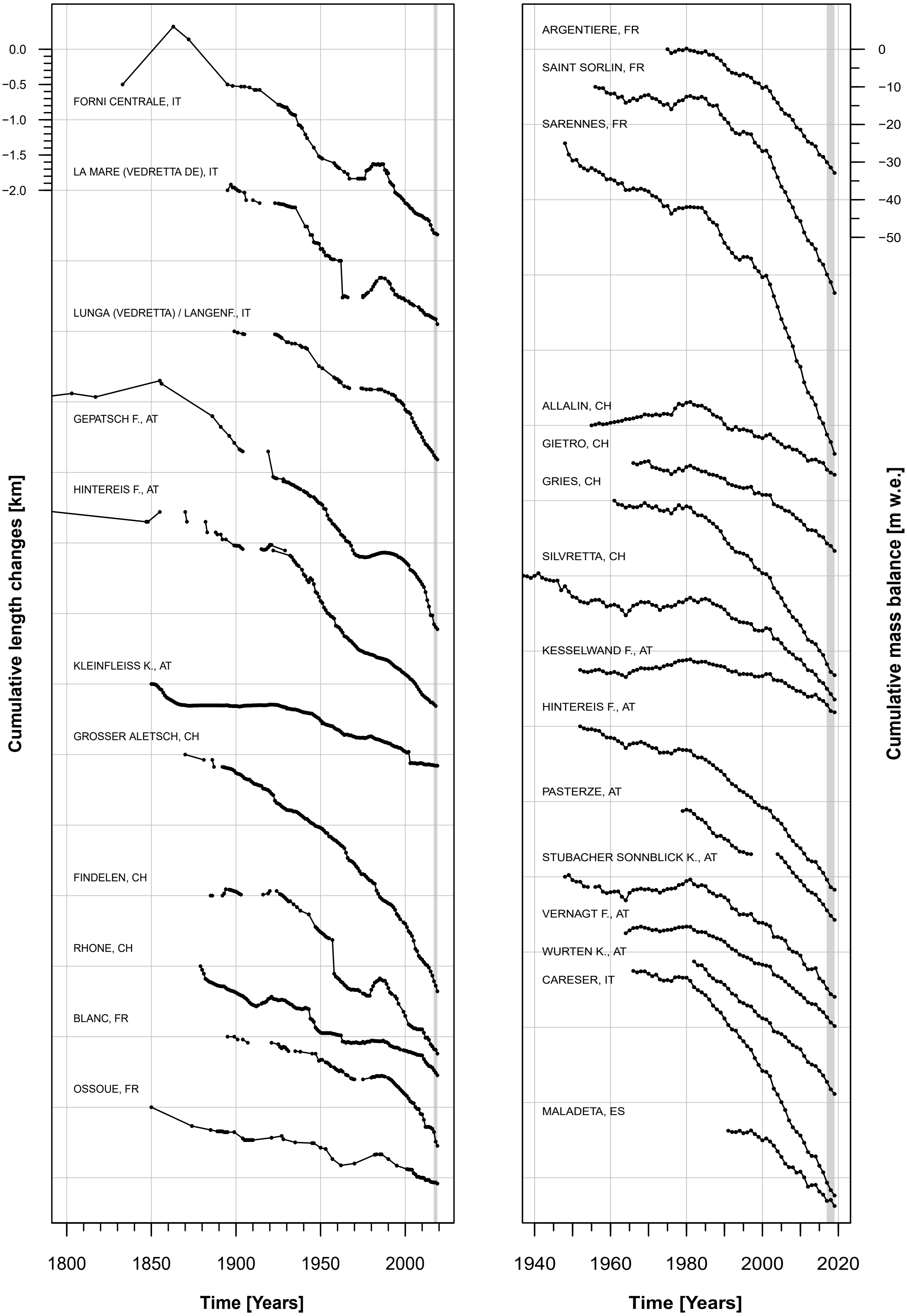


Figure 3.8.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Central Europe over the entire observation period.

3.9 CAUCASUS & MIDDLE EAST

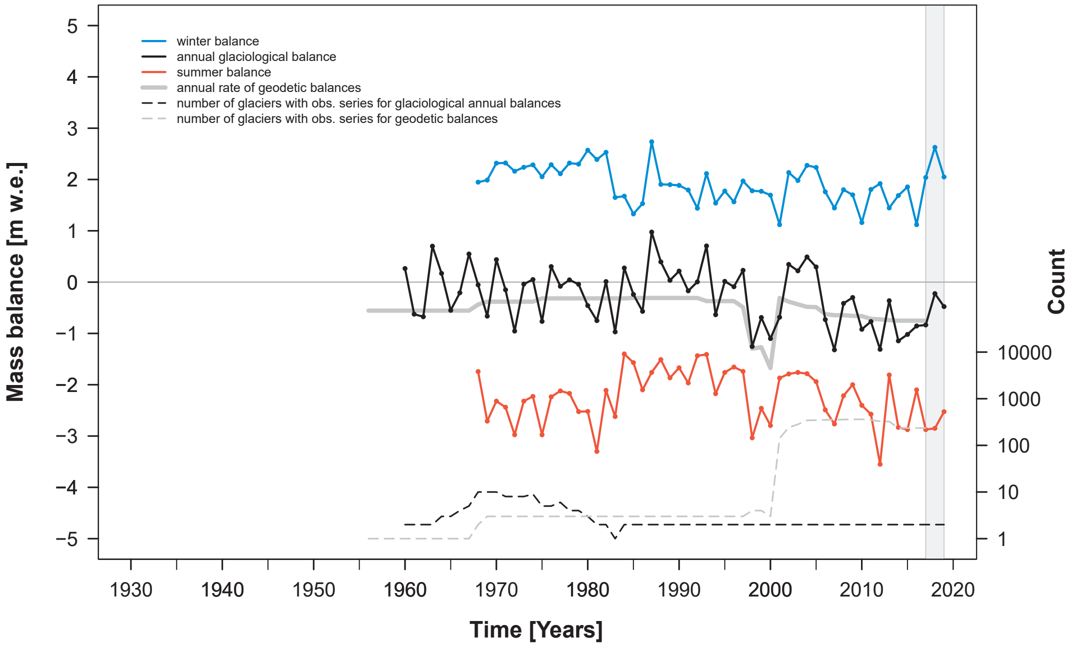


Figure 3.9.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The Greater Caucasus mountain range contains over 2000 glaciers (Tielidze & Wheate, 2018), with total area of about 1500 km². This is about 96% of the contemporary glacier area of the Caucasus and Middle East glacier region. Most of the glaciers are located in the northern Caucasus, with Mount Elbrus (5,642 m a.s.l.) considered the highest peak in Europe. The climate of the Caucasus varies with elevation and latitude. The northern slopes are a few degrees colder than the southern slopes and precipitation increases from east to west in most regions. In the Middle East, small glaciers are found on Mount Erciyes in Central Anatolia, Turkey, as well as in the higher elevations of the Sabalan, Takhte-Soleiman, Damavand, Oshtorankuh, and Zardkuh regions in Iran.

Mass-balance measurements are reported from a dozen glaciers located in the Caucasus with ongoing long-term series at Djankuat and Garabashi (RU). Frontal variations of glaciers in the Caucasus as well as of Erciyes Glacier (TR) are well-documented throughout the 20th century. Geodetic measurements are available for only Djankuat (Rets et al., 2019) and Alamkouh glaciers located in the Russian Caucasus and in the Takhte–Soleiman of Iran, respectively. In the Caucasus, glaciers reached their LIA maximum extents around 1850 (Grove, 2004). Glacier-front variations show a general trend of glacier retreat with intermittent re-advances around the 1980s. Few further length-change measurements have been reported since 2010.

The few mass-balance measurement series indicate negative mean balances around –250 mm w.e. a^{-1} over the past decades, with a relatively large mass turnover. The negative peak in the geodetic results before 2000 is caused by the very small geodetic sample size, and an unfortunate mixture of the moderately negative values from the Caucasus glaciers with the strongly negative values from Alamkouh Glacier, Iran. The mean balances of Djankuat and Garabashi glaciers were –224 mm w.e. and –477 mm w.e. in 2017/18 and 2018/19, respectively.

Regional glacier change assessments were recently published by Kutuzov et al. (2019) and Tielidze et al. (2018, 2020).

Estimated total glacier area (km²):	1,500
Front variations	
- # of series*:	76/3
- # of obs. from stat. or adv. glaciers*:	240/0
- # of obs. from retreating glaciers*:	780/5
Glaciological balances	
- # of series*:	13/2
- # of observations*:	192/4
Geodetic balances	
- # of series°:	362/362
- # of observations°:	3,589/3,549
* (total/2018 & 2019), ° (total/>2009)	

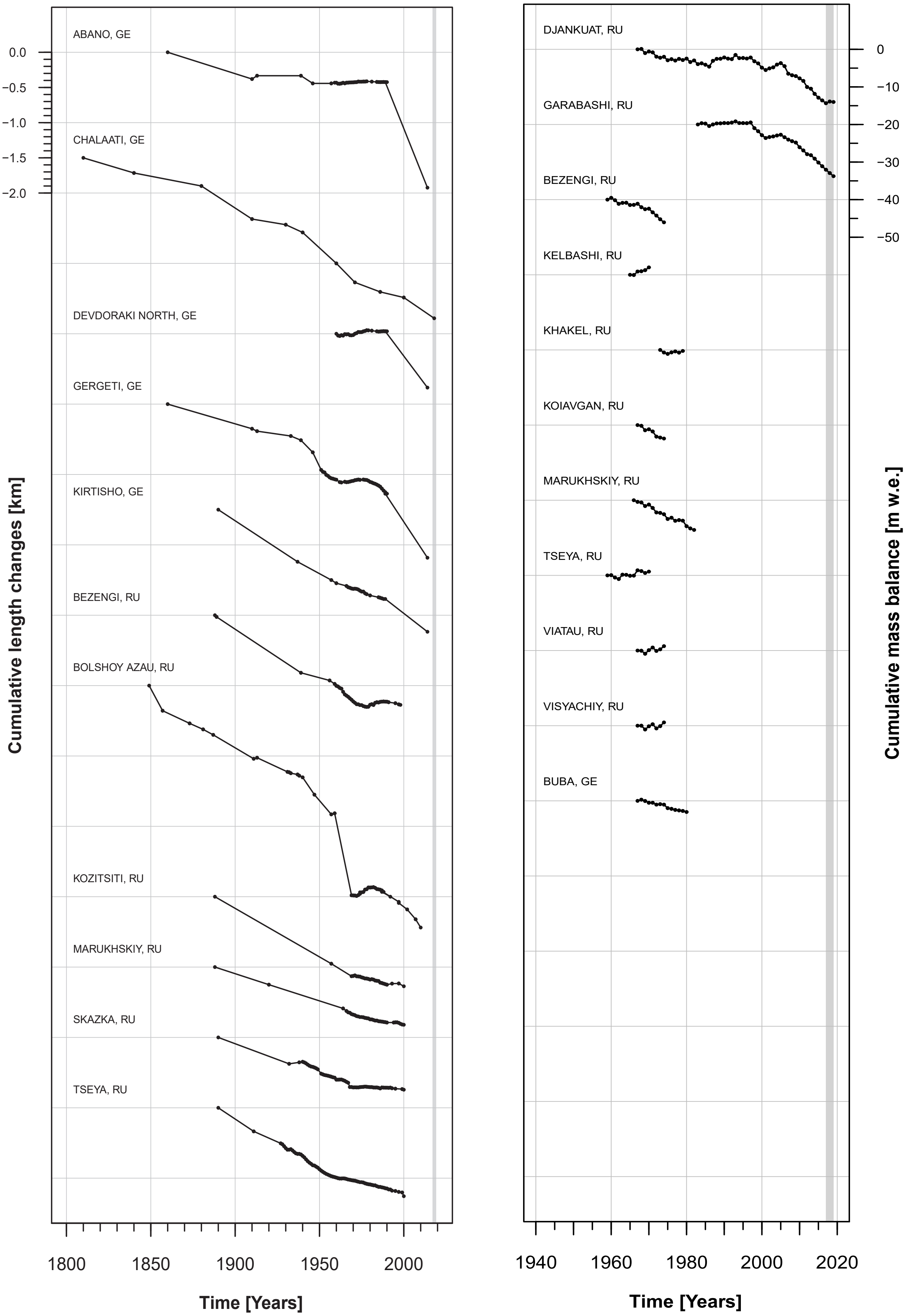


Figure 3.9.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Caucasus and Middle East over the entire observation period.

3.10 RUSSIAN ARCTIC

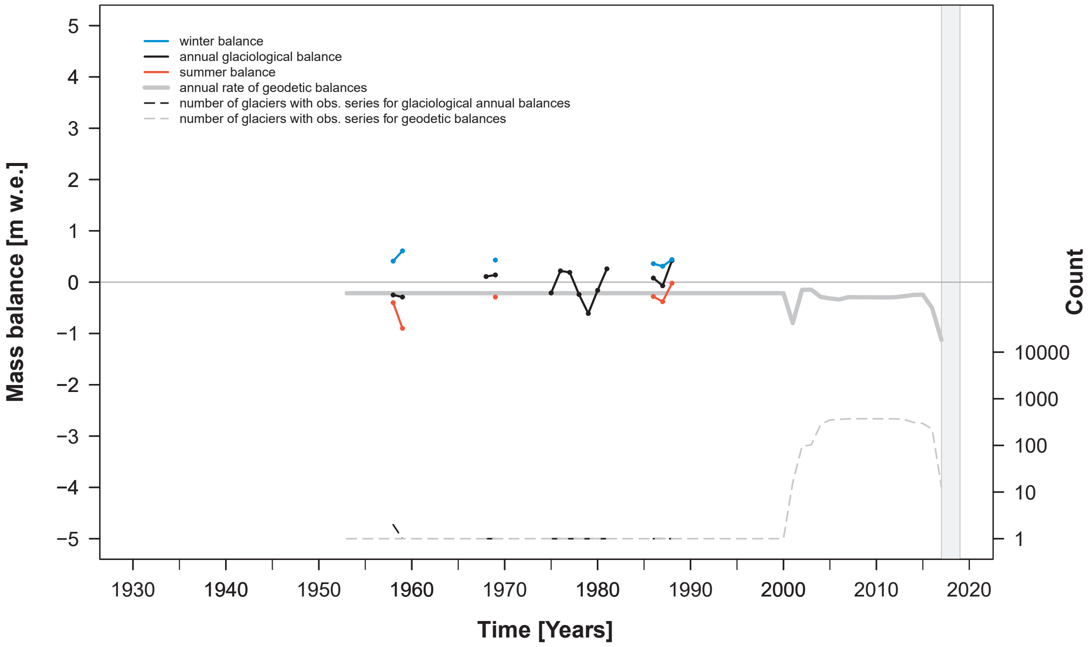


Figure 3.10.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

Large ice caps are located on the Russian high Arctic archipelagos such as Novaya Zemlya, Severnaya Zemlya and Franz Josef Land totalling an area of 51,500 km^2. These glaciers are very much influenced by the North Atlantic Oscillation and sea-ice conditions in the Barents and Kara Seas.

The glaciers in this region are not well investigated due to their remote locations. Front variations have been reported from about 40 outlet glaciers on Novaya Zemlya based on expeditions, topographic maps and remote sensing data (e.g., Carr et al., 2014).

Mass-balance measurements are limited to a few observation years from Sedov Glacier on Hooker Island, Franz Josef Land, and Glacier No. 104, which is part of Vavilov Ice Cap on October Revolution Island, Severnaya Zemlya.

Dated moraines suggest LIA maxima around or after 1300 for some glaciers, and the late 19th century for others on Novaya Zemlya (Zeeberg & Forman, 2001). In the Russian Arctic islands, a slight reduction was found in the glacierized area of little more than one per cent over the past 50 years (Kotlyakov, 2006). Front-variation observations document a rapid retreat of tidewater glaciers on Novaya Zemlya over the 20th century, with a more stable period during the 1950s and 1960s.

The geodetic observations indicate a mass-change rate between –200 and –350 mm w.e. a^{-1}.

Regional glacier change assessments were recently published by Carr et al. (2014), Melkonian et al. (2016), Sommer et al. (2020b), and Zheng et al. (2018).

Estimated total glacier area (km^2):	51,500
Front variations	
- # of series*:	44/0
- # of obs. from stat. or adv. glaciers*:	151/0
- # of obs. from retreating glaciers*:	382/0
Glaciological balances	
- # of series*:	3/0
- # of observations*:	15/0
Geodetic balances	
- # of series°:	373/372
- # of observations°:	3,680/3,668

* (total/2018 & 2019), ° (total/>2009)

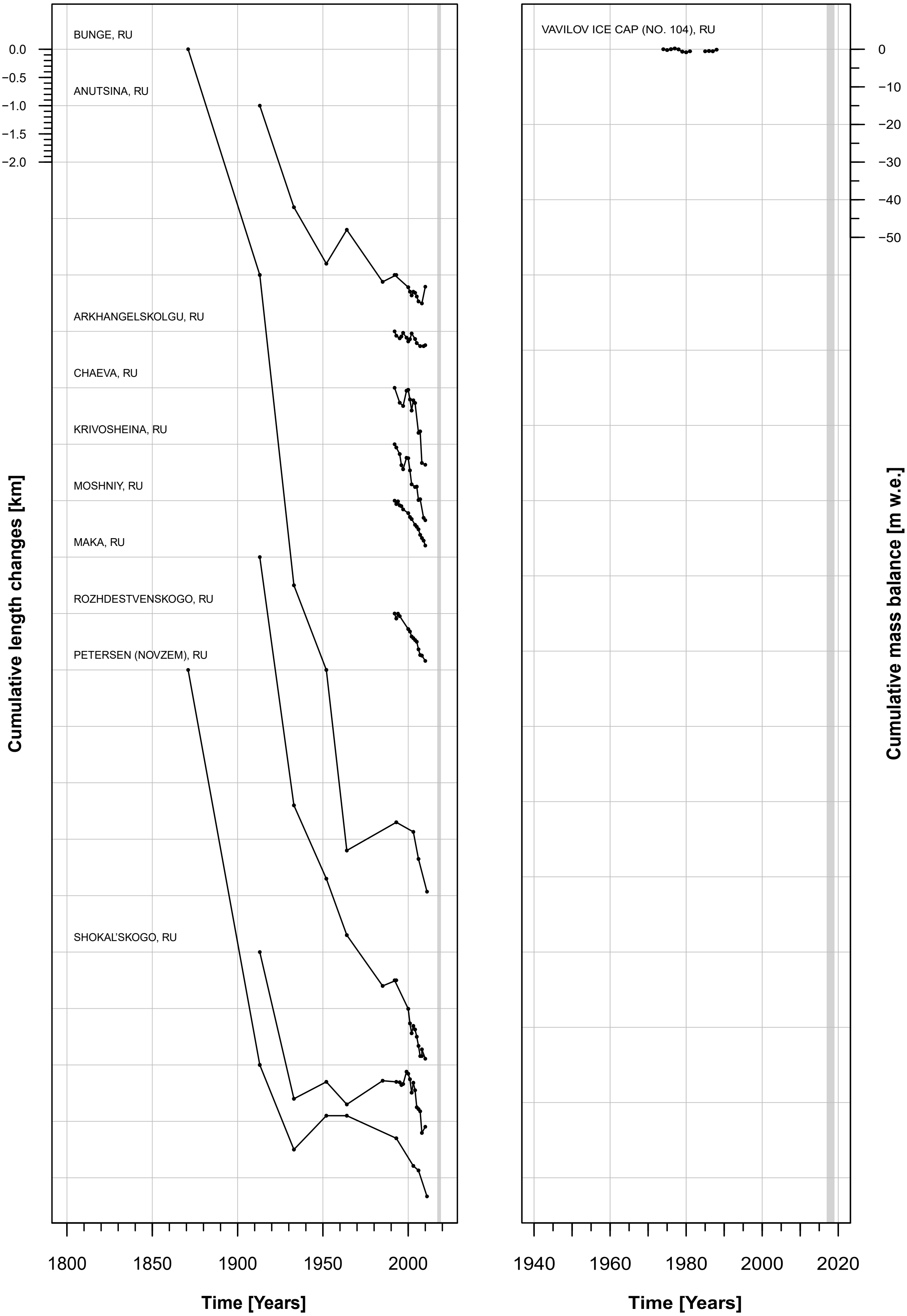


Figure 3.10.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in the Russian Arctic over the entire observation period.

3.11 ASIA NORTH

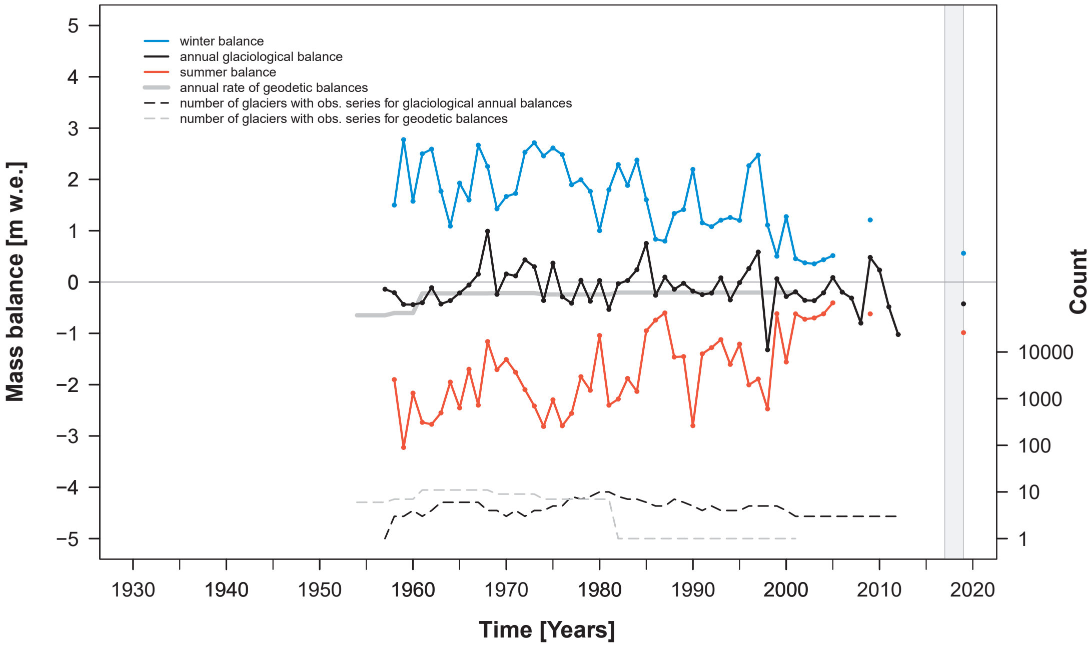


Figure 3.11.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

In Northern Asia, glaciers with a total area of about 2,500 km^2 are located in the mountain ranges from the Ural to the Altai, in the east Siberian Mountains, and Kamchatka. The Ural Mountains form a north-south running mountain chain that extends about 2,500 km. Its mountain peaks reach 900 to 1,400 m a.s.l. hosting about 140 small glaciers in a continental climate. The Altai extends over about 2,100 km from Kazakhstan, China, and Russia to Mongolia, and hosts the greatest number of glaciers in this region. The east Siberian Mountains such as Cherskiy Range, Suntar-Khayata, and Kodar Mountains, have only small amounts of glacier ice. The topography of Kamchatka is characterized by numerous volcanoes with heights up to almost 5,000 m a.s.l. Here, many glaciers are strongly influenced by volcanic activities.

The available data series are sparse and most of them were discontinued in the latter decades of the 20th century. The few mass-balance programmes were reported from Maliy Aktru, Leviy Aktru, and Vodopadniy (No. 125) glaciers in the Russian Altai, but got interrupted after 2012. In 2018/19, the mass-balance programme at Leviy Aktru was resumed. In Japan, long-term observations are carried out on Hamagury Yuki, a perennial snow patch which is located in the northern Alps of Central Japan.

Until some years ago, investigations in the Altay failed to reveal evidence of early LIA advances (Kotlyakov et al., 1991). New studies based on lichenometry indicate extended glacier states in the late 14th and mid-19th centuries (Solomina, 2000). In the Cherskiy Range, the LIA maxima extents have been dated as 1550–1850 (Gurney et al., 2008). On Kamchatka, the maximum stage of the LIA was reached in the 19th century (Grove, 2004), with advances of similar magnitude in the 17th and 18th centuries (Solomina, 2000). The few front-variation series show a centennial retreat with no distinct re-advance periods. Kozelskiy Glacier on Kamchaka advanced during the 1950s to the mid-1980s.

Available mass-balance measurements reveal slightly negative balances since the 1960s. The regional average balance for 2018/19 (i.e. Leviy Aktru) was negative with –425 mm w.e.

Estimated total glacier area (km^2):	2,500
Front variations	
- # of series*:	23/0
- # of obs. from stat. or adv. glaciers*:	43/0
- # of obs. from retreating glaciers*:	321/0
Glaciological balances	
- # of series*:	19/2
- # of observations*:	266/1
Geodetic balances	
- # of series°:	11/0
- # of observations°:	18/0

* (total/2018 & 2019), ° (total/>2009)

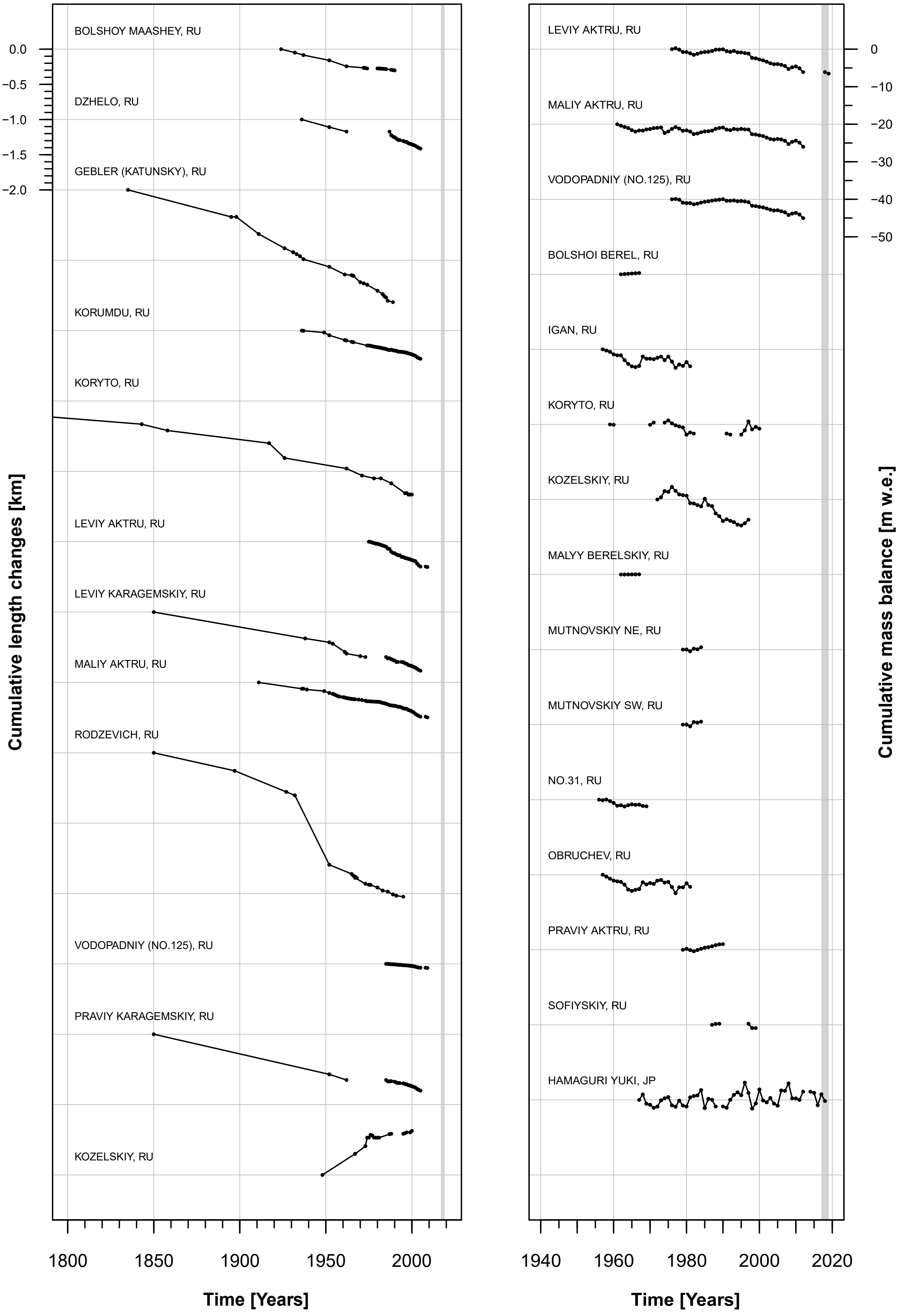


Figure 3.11.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Asia North over the entire observation period.

3.12 ASIA CENTRAL

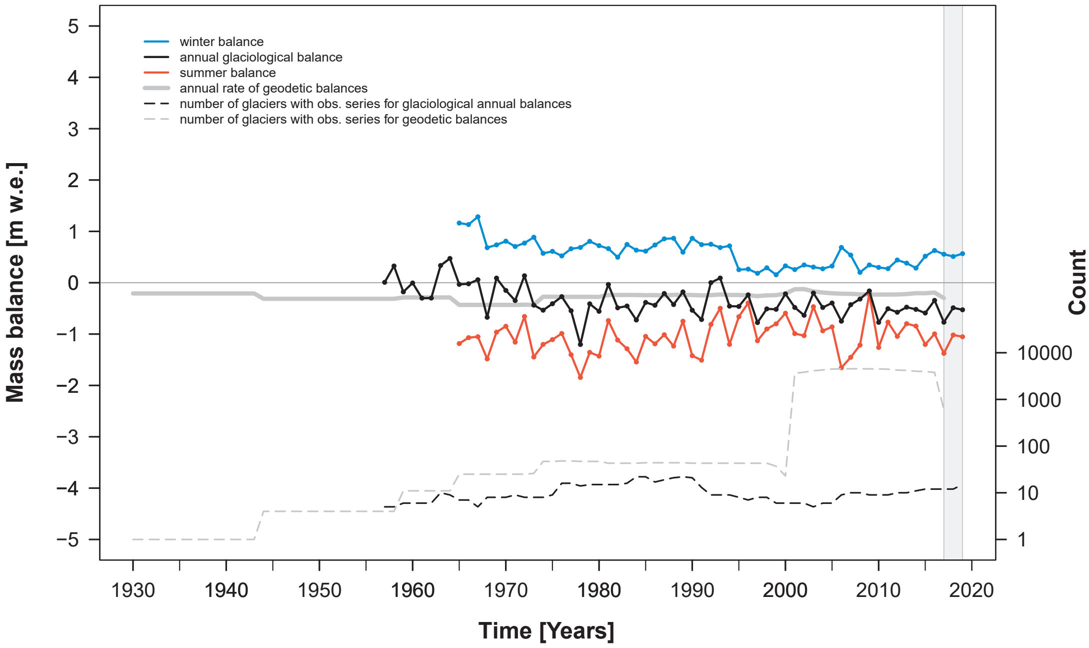


Figure 3.12.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

Central Asia stretches from the Caspian Sea in the west to China in the east and from Russia in the north to Afghanistan in the south. It is characterised by a continental climate. Glaciers cover a total area of about 49,500 km^2 and are located in the Hissar Alay, Pamir, Tien Shan, Kunlun, and Qilian Mountains.

There is a large number of glacier fluctuation series available, distributed evenly over the region. However, continuous long-term measurements are sparse. Most of the observation series were discontinued after the demise of the Soviet Union. Only two of the long-term mass-balance programmes have been continued: Ts. Tuyuksuyskiy and Urumqi Glacier No. 1 in the Kazakh and Chinese Tien Shan, respectively. In recent years, interrupted long-term mass-balance measurements have been resumed at Abramov, Golubin, Glacier No. 354 (Akshiyrak), Batysh Sook/Syek Zapadniy, and Kara-Batkak in Kyrgyzstan.

The LIA is considered to have lasted until the mid or late 19th century in most regions (Grove, 2004) with glacier maximum extents occurring between the 17th and mid 19th centuries (Solomina, 1996; Su & Shi, 2002; Kutuzov, 2005). Front-variation observations show a general retreat over the 20th century with some re-advances around the 1970s.

The available mass-balance measurements indicate slightly negative balances in the 1950s and 1960s with increased ice loss of about –500 mm w.e. a^{-1} between the 1970s and 2000s. Seasonal balances show a relatively small mass turnover. The glaciological results are supported by the available geodetic surveys. Regional average balances for 2017/18 and 2018/19 were –488 and –527 mm w.e., respectively.

Geodetic assessments were made available from various studies (Brun et al., 2017; Gardelle et al. 2013; Holzer et al., 2015; Piedzonka & Bolch, 2015) and show a mass-change rate of about –250 mm a^{-1} since 2000.

Regional glacier change assessments were recently published by Barandun et al. (2020, 2021), Sorg et al. (2012), Unger-Shayesteh et al. (2013), Farinotti et al. (2015), and Hoelzle et al. (2017).

Estimated total glacier area (km^2):	49,500
Front variations	
- # of series*:	310/8
- # of obs. from stat. or adv. glaciers*:	390/0
- # of obs. from retreating glaciers*:	1,196/15
Glaciological balances	
- # of series*:	49/15
- # of observations*:	678/27
Geodetic balances	
- # of series°:	4,564/4,505
- # of observations°:	10,920/10,739
* (total/2018 & 2019), ° (total/>2009)	

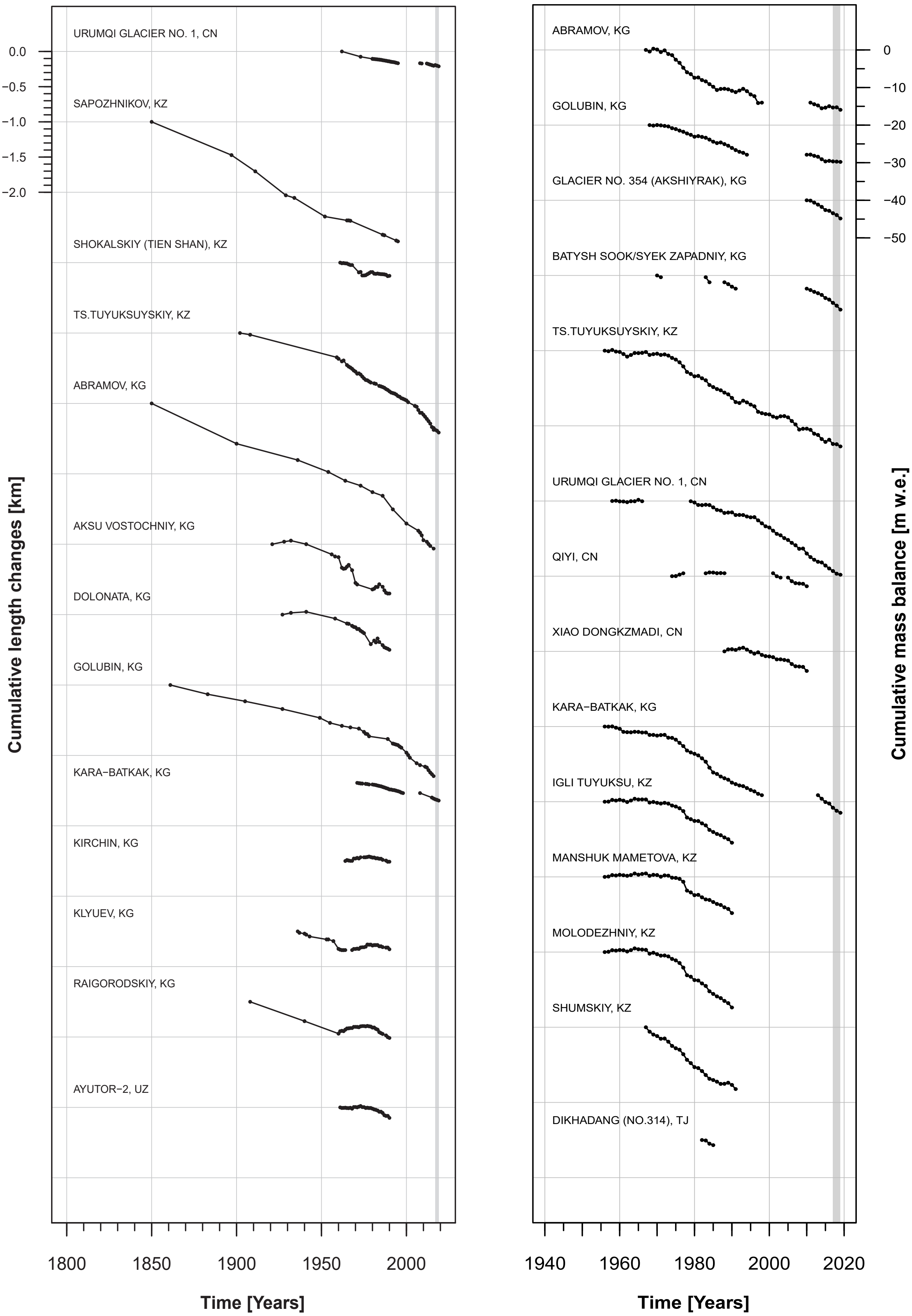


Figure 3.12.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Asia Central over the entire observation period.

3.13 ASIA SOUTH WEST & SOUTH EAST

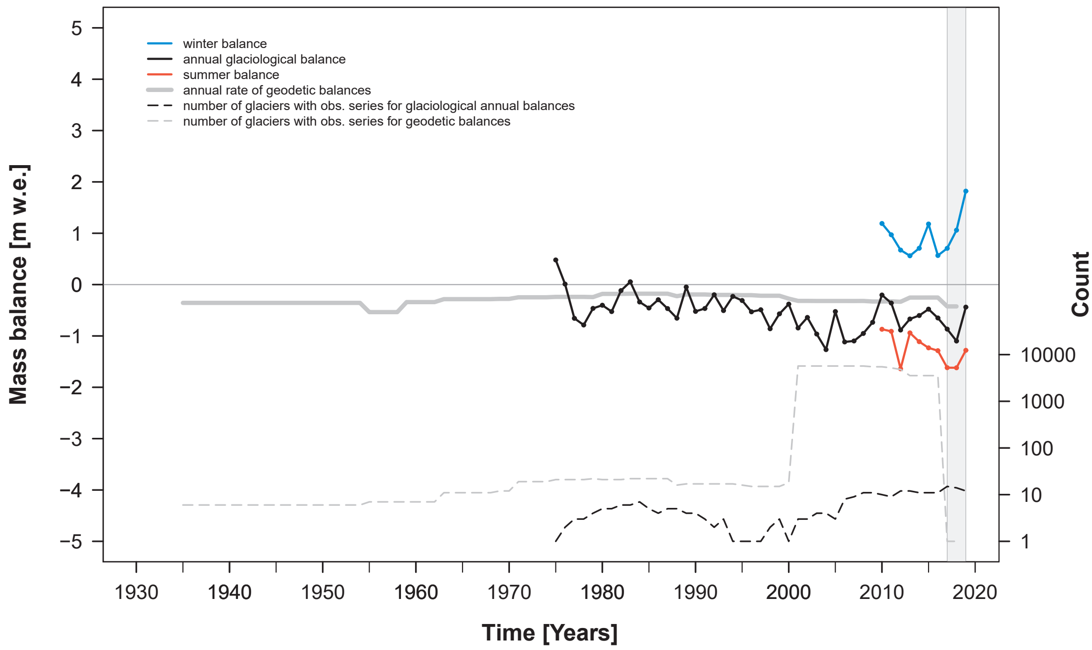


Figure 3.13.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

Adjacent to Central Asia, the regions Asia South West and Asia South East comprise the Karakoram, Hindu Kush, Himalaya, and Hengduan Shan mountain ranges. The Himalaya is the largest mountain range in the world and extends from the Nanga Parbat (8,126 m a.s.l.) in the NW over 2,500 km to the Mancha Barwa (7,782 m a.s.l.) in the SE. The climate, and the precipitation in particular, is characterized by the influence of the South Asian monsoon in summer and the mid-latitude westerlies in winter. The glacier area in this region totals about 48,500 km^2.

The data coverage of Asia South West is very sparse. The only reported mass-balance series of more than ten years is from Chhota Shigri located in the Himachal Pradesh, India. Also Asia South East lacks long-term glacier observation series. Recent mass-balance results are reported from Parlung Glacier No. 94, located in the south-eastern Tibetan Plateau, and from Yala, Rikha Samba, Pokalde, West Changri Nup and Mera glaciers in Nepal.

The LIA is considered to have lasted until the mid or late 19th century in most regions (Grove, 2004) with glacier maximum extents occurring between the 17th and mid-19th century (Solomina, 1996; Su & Shi, 2002; Kutuzov, 2005). Front-variation observations show a general retreat over the 20th century with no marked period of glacier re-advances.

Glaciological and geodetic surveys reported from a variable glacier sample indicate an ice loss at the rate of a few hundred millimetres w.e. a^{-1} over the past decades. For 2017/18 and 2018/19, reported balances were –1,278 and –1,049 mm w.e., respectively, in Asia South East and –920 and 171 mm w.e., respectively, in Asia South West. From the Karakoram, information about positive mass balances and re-advances of (mainly surge-type) glaciers has been reported for the beginning of the 21st century.

Regional glacier change assessments were recently made available by Azam et al. (2018), Bolch et al. (2011), Brun et al. (2015), Dehecq et al. (2019), Gardelle et al. (2013), Rankl et al. (2014), Shean et al. (2020), and Vijay et al. (2016).

Estimated total glacier area (km^2):	48,500
Front variations	
- # of series*:	114/6
- # of obs. from stat. or adv. glaciers*:	69/0
- # of obs. from retreating glaciers*:	332/11
Glaciological balances	
- # of series*:	41/14
- # of observations*:	261/26
Geodetic balances	
- # of series°:	5,697/5,487
- # of observations°:	6,268/5,934

* (total/2018 & 2019), ° (total/>2009)

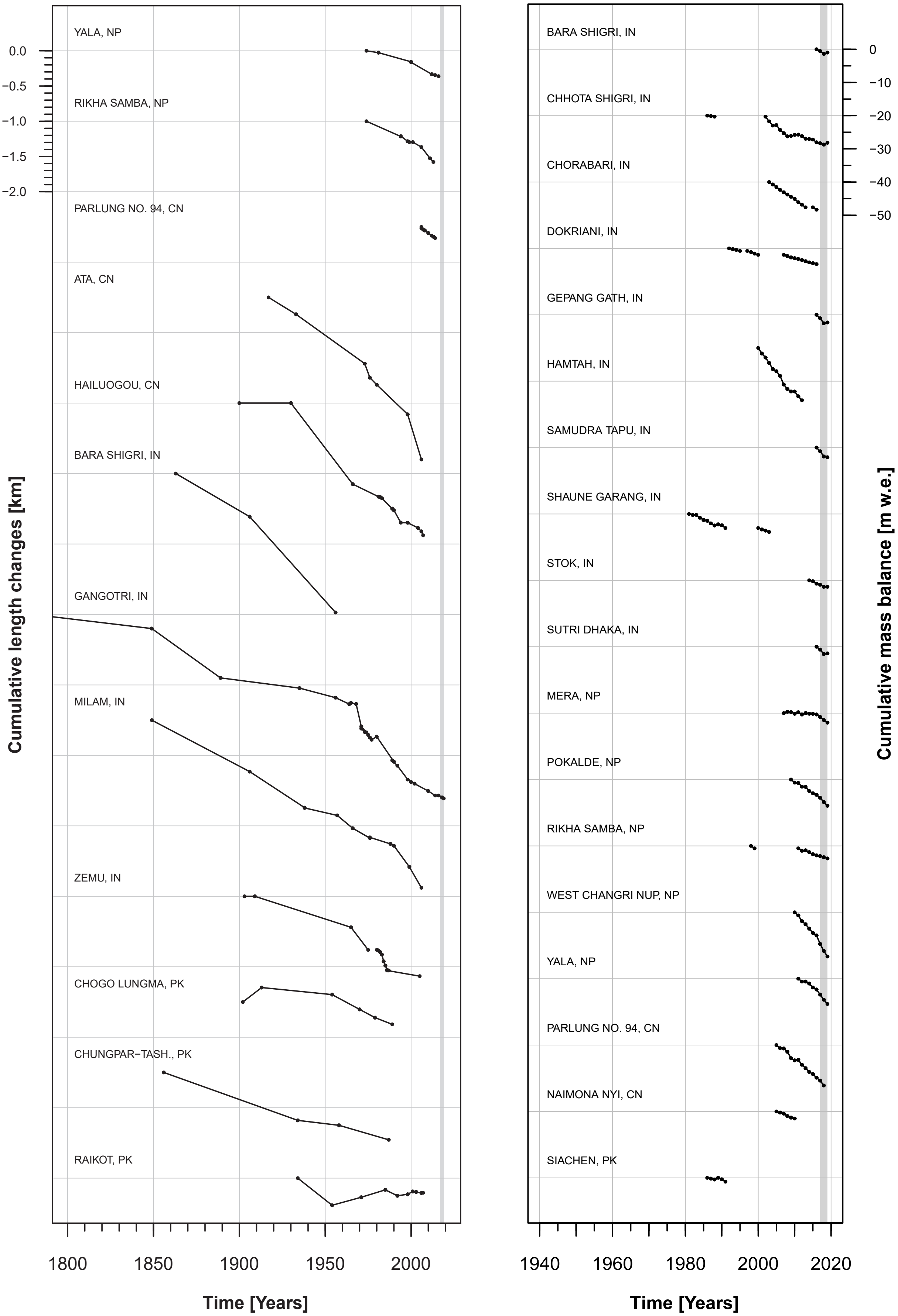


Figure 3.13.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in Asia South East and South West over the entire observation period.

3.14 LOW LATITUDES (incl. Africa & New Guinea)

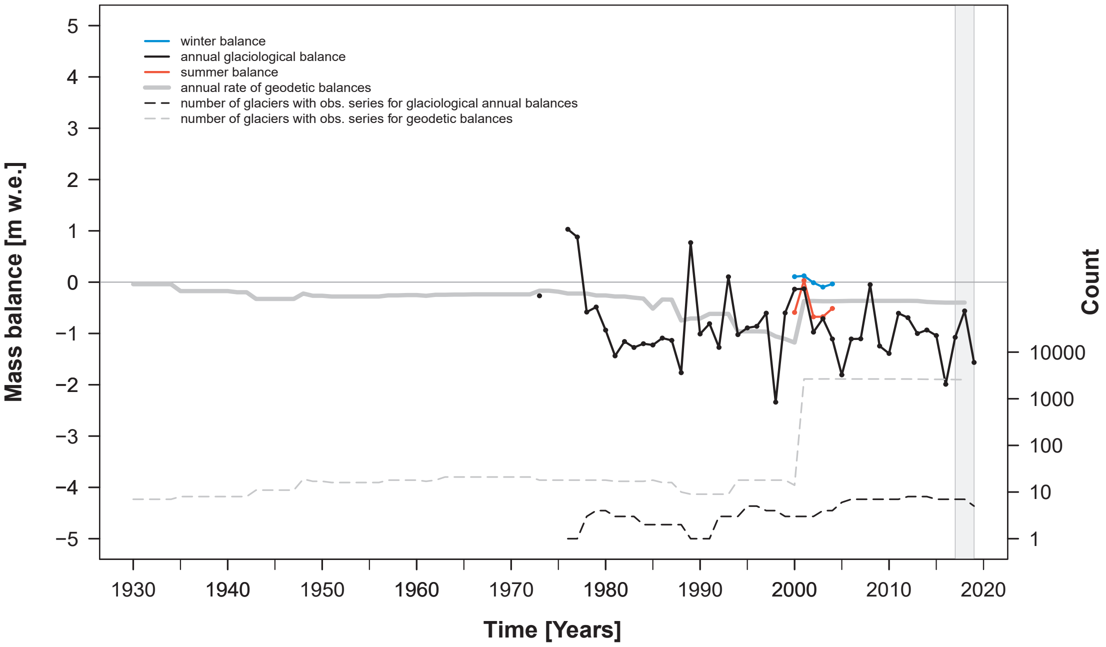


Figure 3.14.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

Glaciers in the low latitudes are situated on the highest mountain peaks of Mexico and in the tropical Andes. In addition, a few ice bodies are located in East Africa on Ruwenzori, Mount Kenya and Kilimanjaro, as well as in Papua (formerly Irian Jaya, Indonesia) and Papua New Guinea. The glacier area of the Low Latitudes totals about 2,500 km^2 of which the largest parts are located in Peru and Bolivia. In the tropical Andes, long-term monthly mass-balance measurements are carried out at Zongo and Charquini Sur glaciers (BO), Antizana 15 Alpha (EC), and Conejeras (CO). Several dozen front-variation series document glacier retreat over the past half-century. Front variations of glaciers in Africa and New Guinea are well documented with a few observation series back to the 19th century. From Lewis Glacier on Mount Kenya, mass-balance measurements have been reported between 1978/79 and 1995/96 and again between 2010/11 and 2013/14.

In the tropical Andes, glaciers reached their latest LIA maximum extensions between the mid-17th and early 18th centuries (Rabatel et al., 2013). Glaciers in Peru and Ecuador were in advanced positions until the 1860s, followed by a rapid retreat (Grove, 2004). Front-variation observations document a general retreat over the 20th century, with increase retreat rates since the late 1970s. In Africa, glaciers reached their LIA maximum extents towards the late 19th century (Hastenrath, 2001) followed by a continuous retreat until present. In New Guinea, glaciers reached their LIA maxima in the mid-19th century. Here the glacier changes have been traced from information on glacier extents derived from historical records, dated cairns erected during several expeditions, and remote sensing data. All ice masses except some on Punkcak Java seem to have now disappeared.

The regional mass balance shows a strong interannual variability with an average mass balance around –800 mm w.e. a^{-1} since between the 1970s and the 2000s. The reported balances for 2017/18 and 2018/19 were –561 and –1,565 mm w.e., respectively. Regional glacier change assessments were recently published by Braun et al. (2019), Dussaillant et al. (2019), Prinz et al. (2011), and Rabatel et al. (2013).

Estimated total glacier area (km^2):	2,500
Front variations	
- # of series*:	90/9
- # of obs. from stat. or adv. glaciers*:	56/2
- # of obs. from retreating glaciers*:	534/15
Glaciological balances	
- # of series*:	14/7
- # of observations*:	190/12
Geodetic balances	
- # of series°:	2685/2652
- # of observations°:	4647/4570

* (total/2018 & 2019), ° (total/>2009)

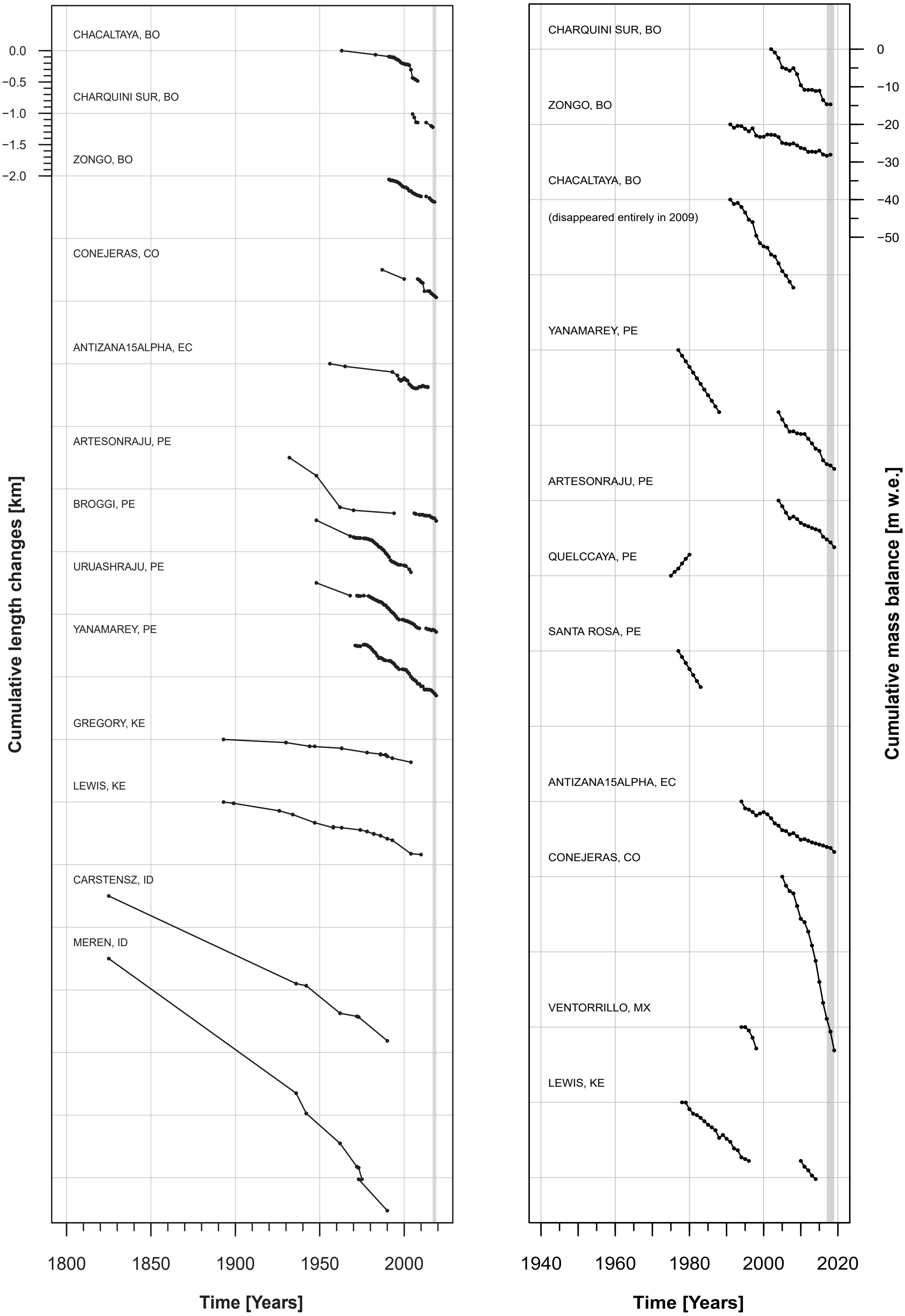


Figure 3.14.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in the Low Latitudes over the entire observation period.

3.15 SOUTHERN ANDES

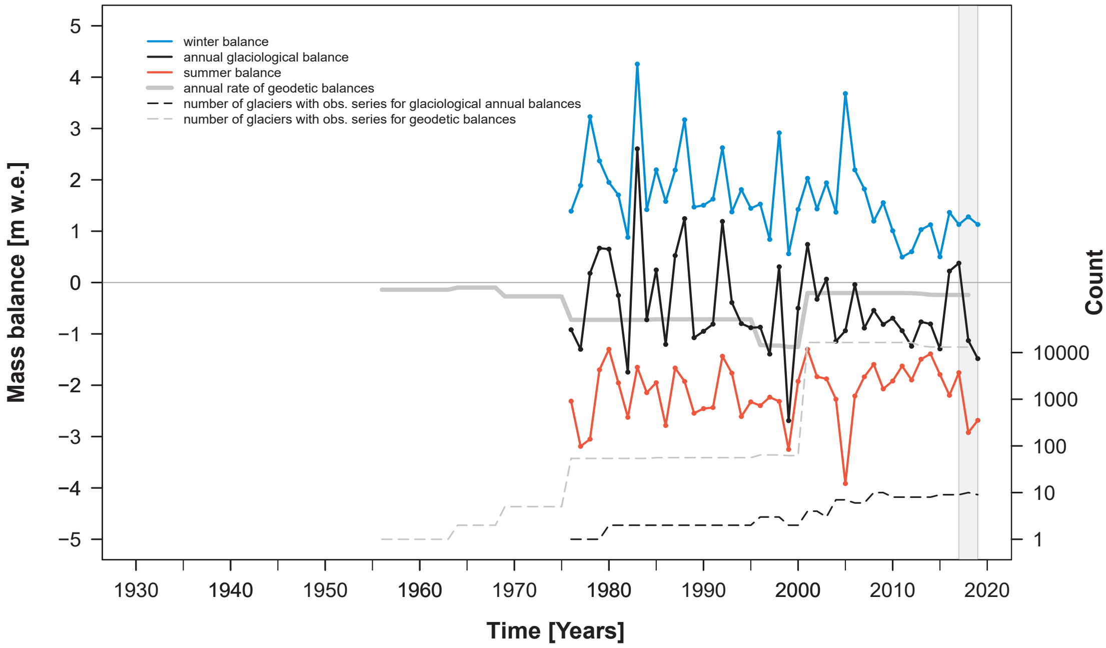


Figure 3.15.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The Southern Andes contain the glaciers of Argentina and Chile, with a total glacier area of about 29,500 km² (cf., Barcaza et al., 2017; Zalazar et al., 2017). The climate and topography vary along the Andes with an important transition around 35° S, between the Dry Andes to the north and the Wet Andes to the south. Most of the glacier area is located in the Wet Andes, including the large Northern and Southern Patagonian Icefields and Cordillera Darwin in Tierra del Fuego. However, the importance of glaciers as a freshwater storage is much higher in the Dry Andes where major cities with large irrigation areas, like Santiago and Mendoza, are located.

The longest mass-balance series of the entire Andes is reported from Echaurren Norte (CL) with continuous measurements since 1975/76. The available mass-balance measurements indicate a strong interannual variability with decadal mean balances slightly negative in the 1970s, 1980s, and 2000s; and –680 mm w.e. a^{-1} in the 1990s. In the last 10 years, several new monitored series were initiated on glaciers in different regions. Regional mean balances were negative with –1,131 mm w.e. in 2017/18 and –1,482 mm w.e. in 2018/19.

Geodetic thickness changes for most glaciers in the Southern Andes were comprehensively assessed and show widespread loss since 2000, with larger rates in the Wet Andes (Braun et al., 2019; Dussaillant et al., 2019; Falaschi et al., 2019; Ferri et al., 2020). The icefields of Patagonia have the highest down-wasting rates, contributing significantly to sea-level rise (Rignot et al., 2003; Malz et al., 2018).

In the Southern Andes, most glaciers reached their LIA maximum between the late 17th and early 19th century (Masiokas et al., 2009). Most front-variation measurements document a general retreat since the LIA maximum extent with some re-advances in the 1980s and a general retreat trend in recent decades (Lopez et al., 2010; Meier et al., 2018). In the Dry Andes, 21 glaciers with surge-type behavior were found (Falaschi et al., 2018); the most recent being Horcones Inferior and Nevado del Plomo in Argentina (Pitte et al., 2016).

Estimated total glacier area (km²):	29,500
Front variations	
- # of series*:	213/1
- # of obs. from stat. or adv. glaciers*:	176/0
- # of obs. from retreating glaciers*:	526/2
Glaciological balances	
- # of series*:	16/10
- # of observations*:	197/19
Geodetic balances	
- # of series°:	16,480/16,439
- # of observations°:	22,021/21,936

* (total/2018 & 2019), ° (total/>2009)

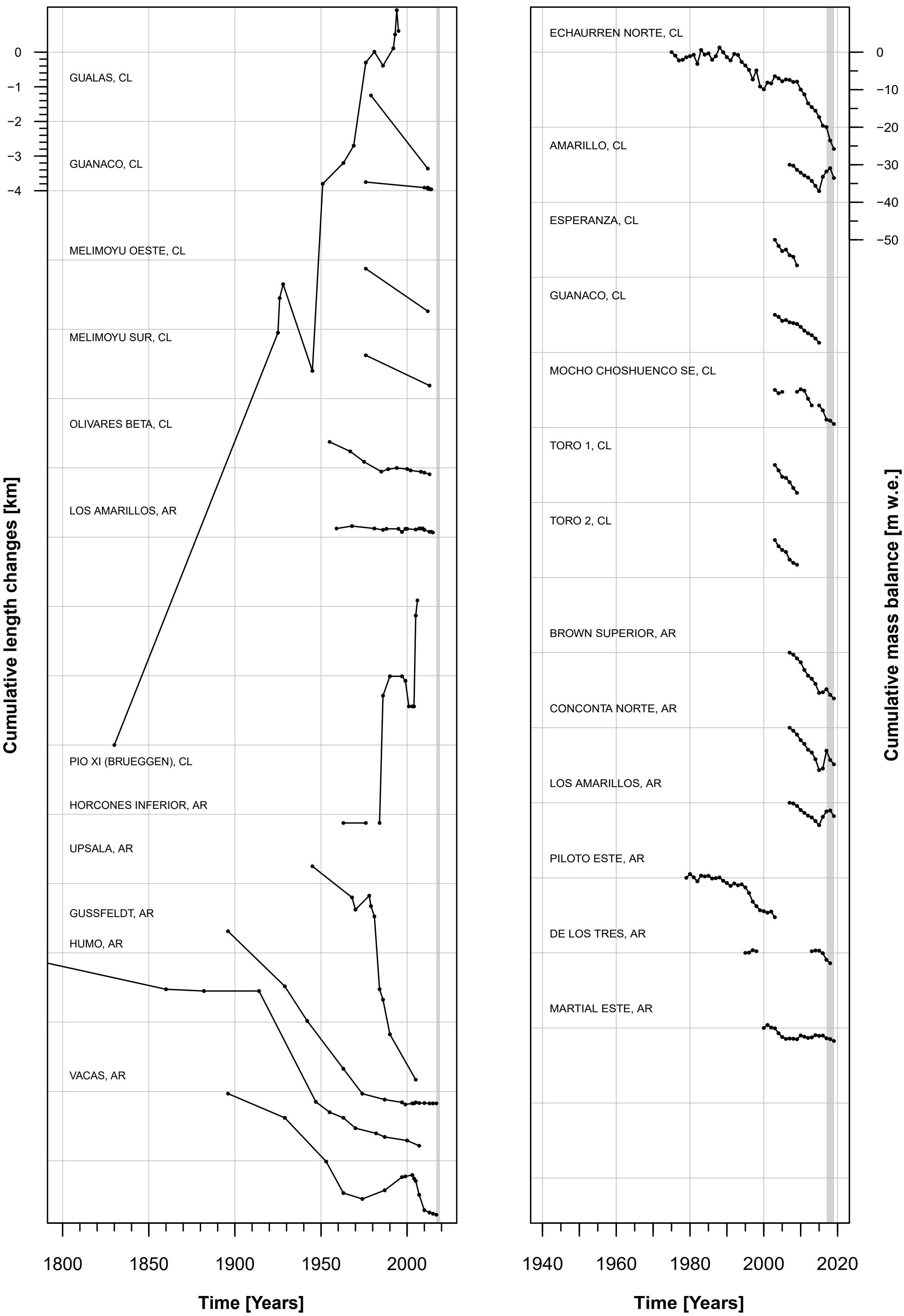


Figure 3.15.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in the Southern Andes over the entire observation period.

3.16 NEW ZEALAND

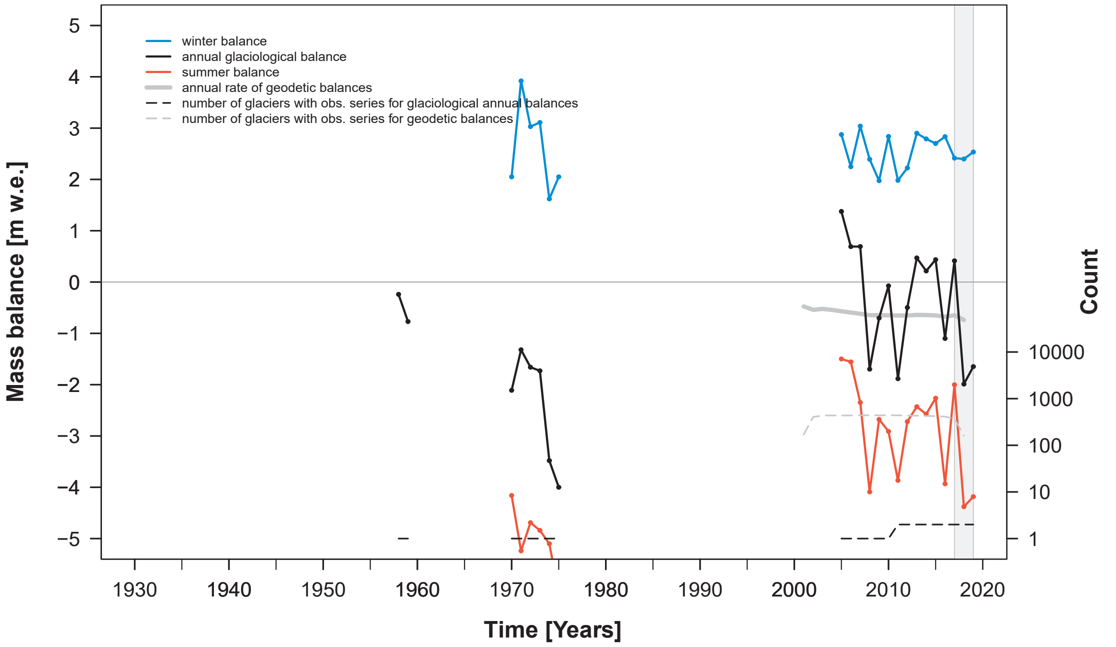


Figure 3.16.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The majority of glaciers in New Zealand are located along the Southern Alps/Kā Tiritiri o te Moana spanning the length of the South Island between 42° and 46° South. Their climatic regime is characterized by high precipitation with extreme gradients. Mean annual precipitation amounts to 4,500 mm on the west side (Whataroa) of the Alps and maximum values of up to 15,000 mm (cf. WGMS, 2008). Aoraki/Mount Cook is the highest peak at 3,724 m a.s.l. The Haupapa/Tasman Glacier, the largest glacier in New Zealand, is located below its flank. In total, the inventory of 2016 reported 2,918 glaciers covering an area of 794 ± 34 km^2 (Baumann et al., 2021). Estimates of ice volume vary widely between 53 km^3 (Chinn, 2001), 61 km^3 (Huss and Farinotti, 2012), and 73 km^3 (Farinotti et al., 2019).

New Zealand has a long history of glacier observation; however, most of the available front variation series are of qualitative character, i.e., indicating whether glacier fronts are advancing, retreating or stationary. Long-term quantitative front-variation series are reported for Franz Josef Glacier/Kā Roimata o Hine Hukatere, Fox Glacier/Te Moeka o Tuāwe, and Stocking/Te Wae Wae Glacier. Mass-balance observations are available for only a few glaciers; recent measurements have been reported for Brewster and Rolleston.

Since 1977, the end-of-summer-snow-line has been surveyed on fifty index glaciers distributed over the Southern Alps/Kā Tiritiri o te Moana. The surveys are carried out by hand-held oblique photography taken from a light aircraft. Methods, data and more details are given in Chinn et al. (2005).

The few mass-balance measurements indicate a large interannual variability with an average mean balance of a few hundred millimetres w.e. a^{-1}. Seasonal balances indicate very large mass turnover. Average annual balances (of Rolleston and Brewster) were very negative in 2017/18 and 2018/19 with –1,989 and –1,648 mm w.e., respectively.

The geodetic assessment by Zemp et al. (2019a) shows a mass-change rate of about –600 mm w.e. a^{-1} since 2000. Regional glacier change assessments were recently published by Carrivick et al. (2020), Mackintosh et al. (2017), and Salinger et al. (2021).

Estimated total glacier area (km^2):	1,000
Front variations	
- # of series*:	103/03
- # of obs. from stat. or adv. glaciers*:	492/1
- # of obs. from retreating glaciers*:	660/5
Glaciological balances	
- # of series*:	5/2
- # of observations*:	33/4
Geodetic balances	
- # of series°:	439/439
- # of observations°:	31,853/31,758

* (total/2018 & 2019), ° (total/>2009)

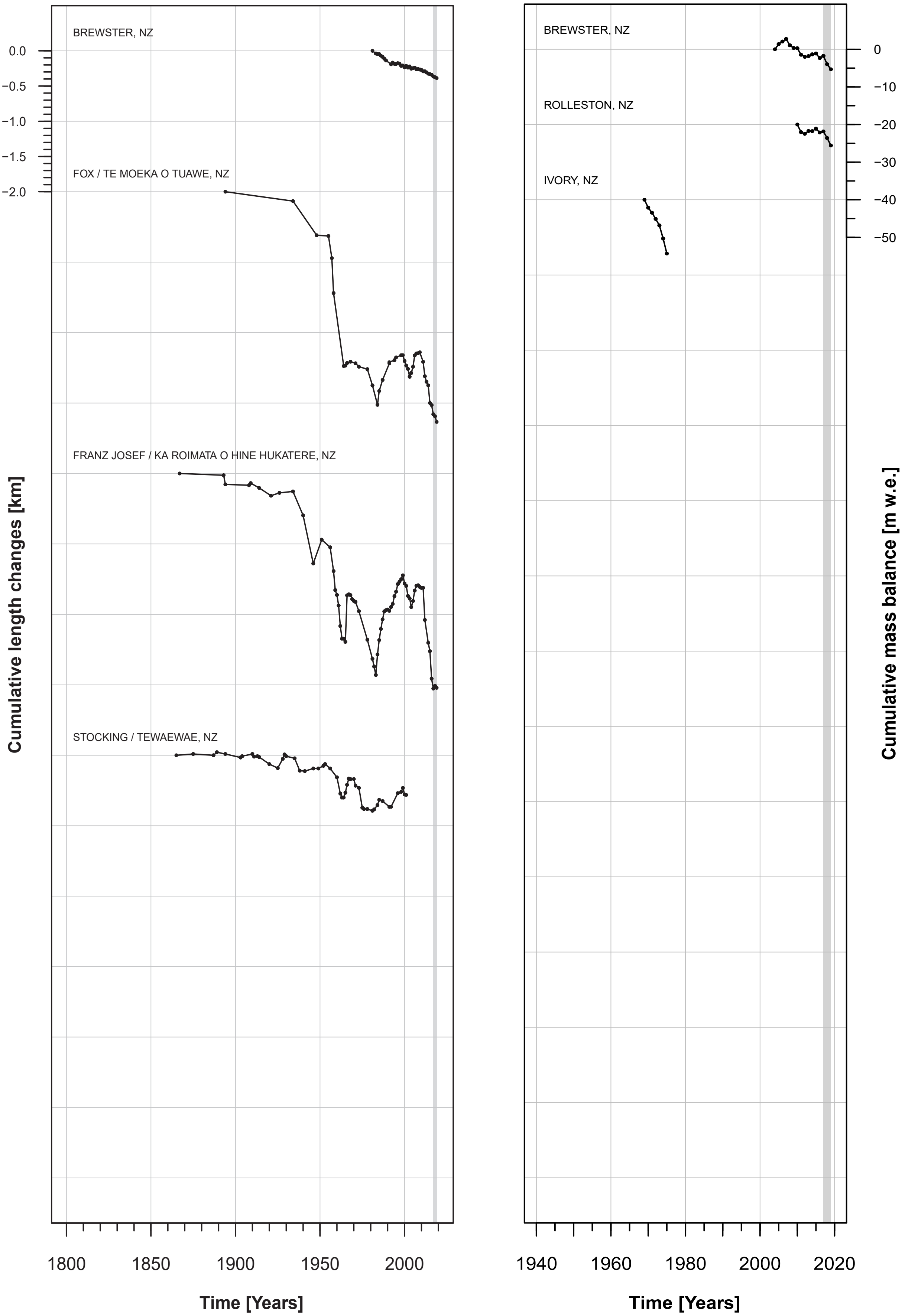


Figure 3.16.2 Cumulative length changes (left) and cumulative mass balances (right) of selected glaciers in New Zealand over the entire observation period.

3.17 ANTARCTICA & SUBANTARCTIC ISLANDS

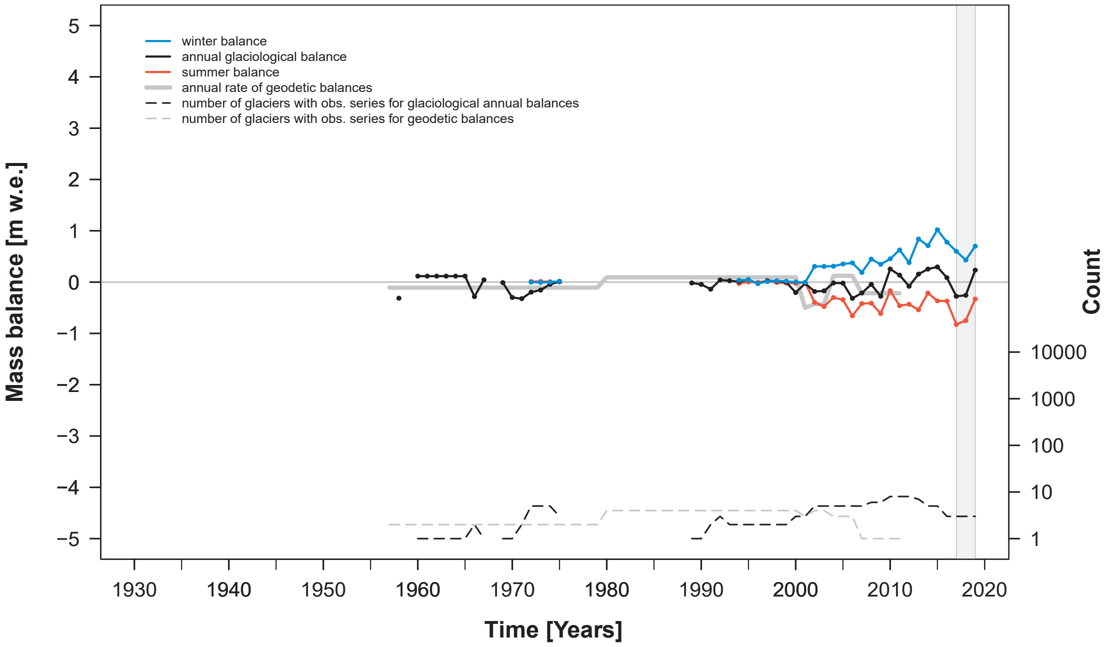


Figure 3.17.1 Regional mass balances: Annual glaciological balances (m w.e.) and annual rates of geodetic balances (m w.e. a^{-1}) are shown together with the corresponding number of glaciers with observations. Geodetic balances were calculated assuming a glacier-wide average density of 850 kg m^{-3}.

The total area of local glaciers in and around Antarctica is estimated to be about 133,000 km^2. Mainly due to the remoteness and the immense size of the ice masses, little is known about these glaciers. There are three categories of local glaciers outside the ice sheet: coastal glaciers, ice streams which are discrete dynamic units attached to the ice sheet, and isolated ice caps. In addition, glaciers are situated on Subantarctic Islands such as the South Shetland Islands, South Georgia, Heard Islands, and Kerguelen with a total estimated ice cover of roughly 7,000 km^2. Mass-balance measurements are available from only a dozens of glaciers. Series of more than ten years are reported from Bahía del Diablo on Vega Island as well as from Hurd and Johnsons glaciers on Livingston Island located east and west of the northern tip of the Antarctic Peninsula.

Evidence of the timing of LIA glacier maxima south of the Antarctic Circle (66° 30' S) is sparse due to the lack of organic material for dating (Grove, 2004). For South Georgia, LIA maximum extends are reported for the 18th, 19th, and 20th centuries (Clapperton et al., 1989a, b) and LIA end is suggested to be 1870s from lichenometry (Roberts et al., 2010).

Front variations, derived from aerial photographs and satellite images, of glaciers on the Antarctic Peninsula show a vast majority of glaciers retreating over the past six decades (e.g., Cook et al., 2005). Glaciers on South Georgia receded overall by varying amounts from their more advanced positions in the 19th century, with large tidewater glaciers showing a more variable behaviour and remaining in relatively advanced positions until the 1980s. According to expedition records, little or no change occurred on glaciers at Heard Island during the first decades of the 20th century (Grove, 2004). However, in the second half, glacier recession has been widespread, interrupted by a period of some re-advancing glaciers in the 1960s. The very few glaciological and geodetic surveys indicate slightly negative mass balances since the 1960s and some positive years recently. Reported balances for 2017/18 and 2018/19 averaged at –257 and 233 mm w.e., respectively.

Regional glacier change assessments were recently published by Farías-Barahona et al. (2020).

Estimated total glacier area (km^2):	133,000
Front variations	
- # of series*:	309/1
- # of obs. from stat. or adv. glaciers*:	138/0
- # of obs. from retreating glaciers*:	365/1
Glaciological balances	
- # of series*:	21/3
- # of observations*:	157/6
Geodetic balances	
- # of series°:	6/1
- # of observations°:	6/1

* (total/2018 & 2019), ° (total/>2009)

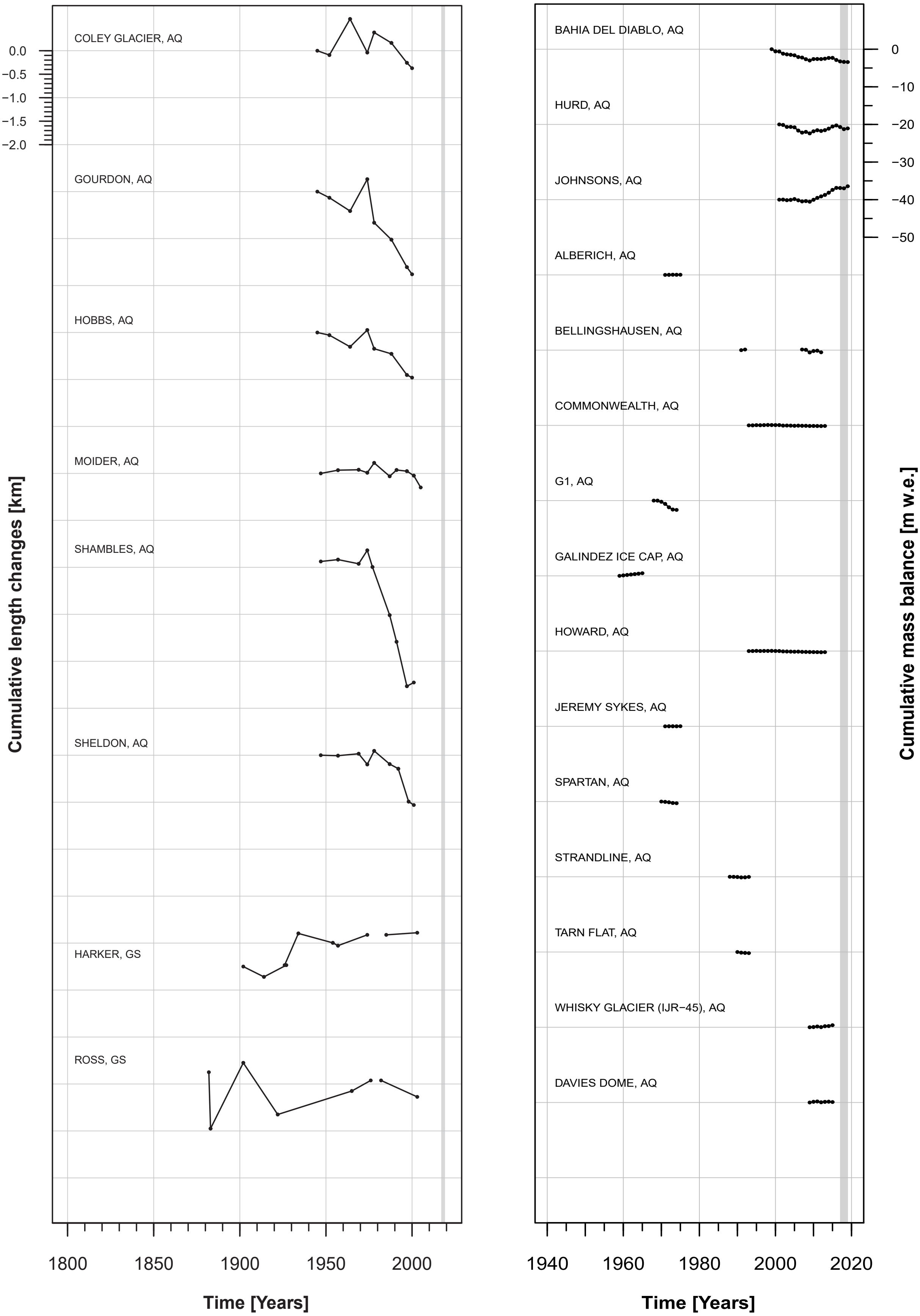


Figure 3.17.2 Cumulative length changes (left) and cumulative mass balances (right) of of selected glaciers in Antarctica and the Subantarctic Islands over the entire observation period.

4 DETAILED INFORMATION

Detailed information on selected glaciers with ongoing direct glaciological mass-balance measurements in various mountain ranges is presented here, in addition to the global and regional information contained in the previous chapters. In order to facilitate comparison between the individual glaciers, the submitted material (text, maps, graphs and tables) was standardized, and in some cases generalized.

The text provides general information on the glacier followed by characteristics of the two reported balance years. General information concerns basic geographic, topographic, climatic and glaciological characteristics of the observed glacier which may help with the interpretation of climate/glacier relationships. A recent photograph showing the glacier is included.

Three maps are presented for each glacier: the first one, a topographic map, shows the stakes, snow pits and snow probing network. This network is basically the same from one year to the next on most glaciers. In cases of differences between the two reported years, the second was chosen, i.e., the network from the year 2018/19. The second and third maps are mass-balance maps from the reported years, illustrating the pattern of ablation and accumulation. The accuracy of such mass-balance maps depends on the density of the observation network, the complexity of the mass-balance distribution, the applied technique for spatial extrapolation, and the experience of the local investigators.

A graph of glacier mass balance versus elevation is given for both reported years, overlaid with the corresponding glacier hypsography and point measurements (if available). The relationship between mass balance and elevation – the mass-balance gradient – is an important parameter in climate/glacier relationships and represents the climatic sensitivity of a glacier. It constitutes the main forcing function of glacier flow over long time intervals. Therefore, the mass-balance gradient near the balanced-budget equilibrium line altitude (ELA_0) is often called the ‘activity index’ of a glacier. The glacier hypsography reveals the glacier elevation bands that are most influential for the specific mass balance, and indicates how the specific mass balance might change with a shift in the ELA. An additional graph compares the mean annual glaciological and the geodetic balances (if available) for the whole observation period. For the comparison, the geodetic values were converted with a density factor of 850 kg m^{-3}.

The last two graphs show the relationship between the specific mass balance and the accumulation area ratio (AAR) and the ELA for the whole observation period. The linear regression equation is given at the top of both diagrams. The AAR regression equation is calculated using integer values only (in percent). AAR values of 0 or 100% as well as corresponding ELA values outside the elevation range of the observed glaciers were excluded from the regression analysis. The regressions were used to determine the AAR_0 and ELA_0 values for each glacier. The points from the two reported balance years (2017/18 and 2018/19) are marked in black. Minimum sample size for regression was defined as six ELA or AAR values.

4.1 BAHÍA DEL DIABLO (ANTARCTICA/A. PENINSULA)

COORDINATES: 63.82° S / 57.43° W

Photograph taken by S. Marinsek, 28 February 2018.

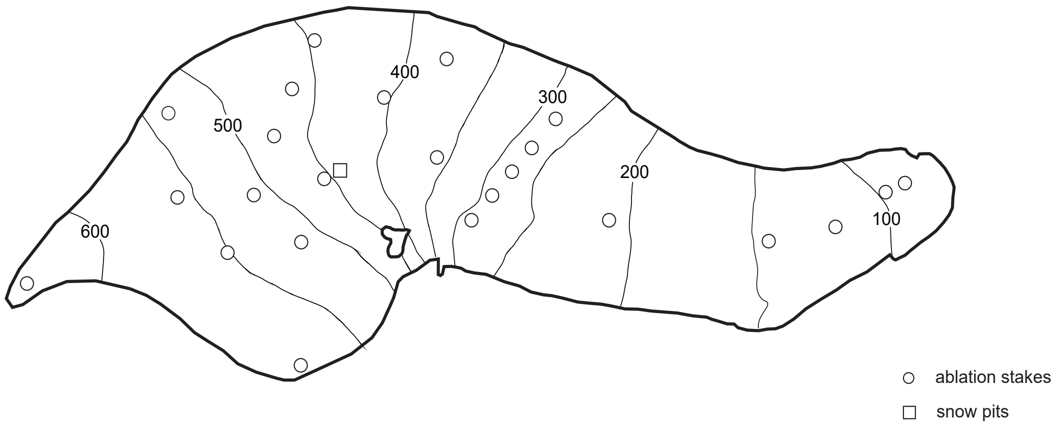
This polythermal-type outlet glacier is located on Vega Island, on the northeastern side of the Antarctic Peninsula. The glacier is exposed to the northeast, covers an area of ~12.9 km^2, and extends from an altitude of 630 m to 50 m a.s.l. The mean annual air temperature at the equilibrium line, around 400 m a.s.l., ranges between –7 and –8 °C. The glacier snout overrides an ice-cored moraine over a periglacial plain of continuous permafrost. The mass-balance measurements on this glacier began in austral summer 1999/2000, using a simplified version of the combined stratigraphic annual mass-balance method because the glacier can be visited only once a year.

The mass balance for the year 2017/18 was –130 mm w.e. and the mass balance for the year 2018/19 was –40 mm w.e., both negative with the last near equilibrium. The values obtained for the ELA in both periods were similar, 350 m and 340 m a.s.l., the AAR values were 59% and 60%, and both of them are in concordance with the mass balance obtained.

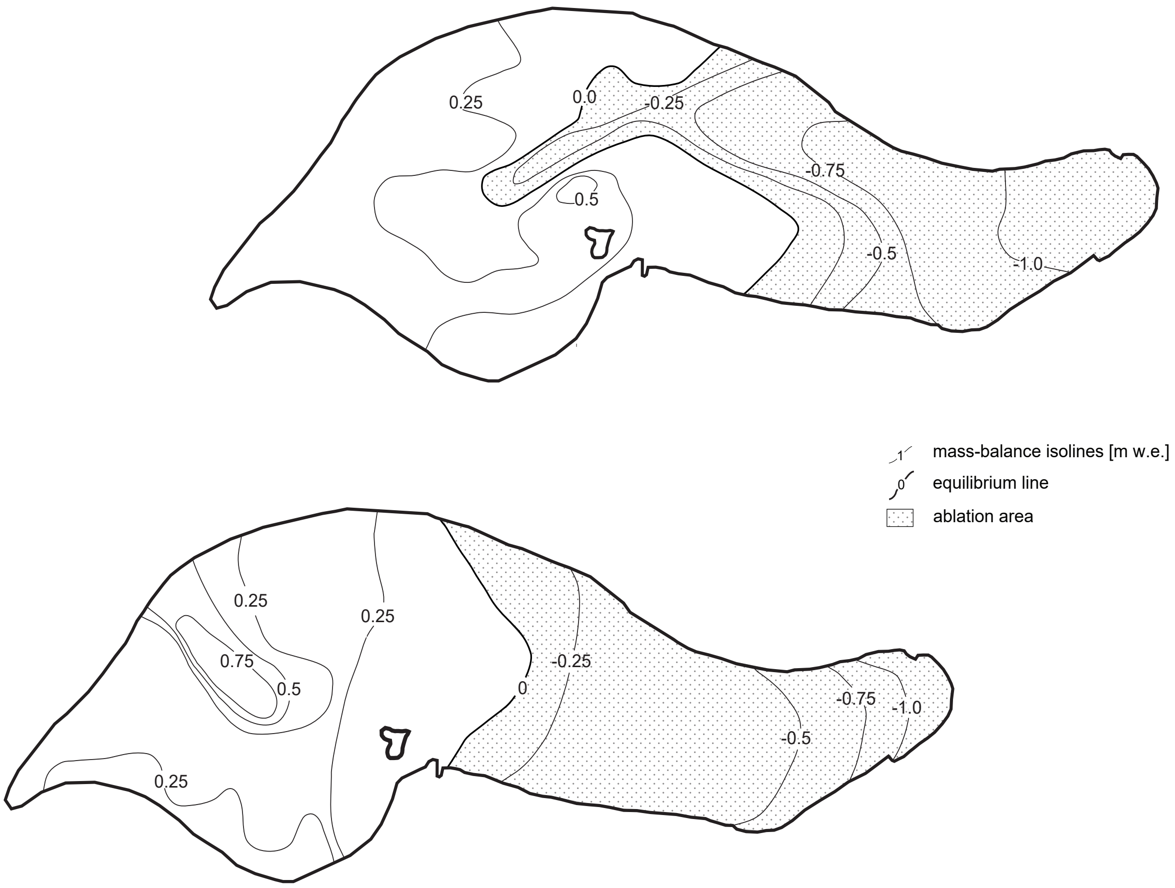
Precipitation in the region, recorded annually at 650 m a.s.l and sea level, is still lower than the average recorded since the beginning of the mass-balance programme. For 2017/18 precipitation at 650 m a.s.l was ~270 mm and ~160 mm at sea level. For 2018/19 precipitation at 650 m a.s.l was ~410 mm and ~130 mm at sea level. The combination of low precipitation together with a warm summer in 2017/18 (+0.50 °C) and a not very cold summer in 2018/19 (–0.19 °C) led to the negative mass balances.

Figure 4.1.1 Topography and observation network and mass-balance maps 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Bahía del Diablo (ANTARCTICA)

Figure 4.1.2 Mass balance versus elevation for 2017/18 and 2018/19.

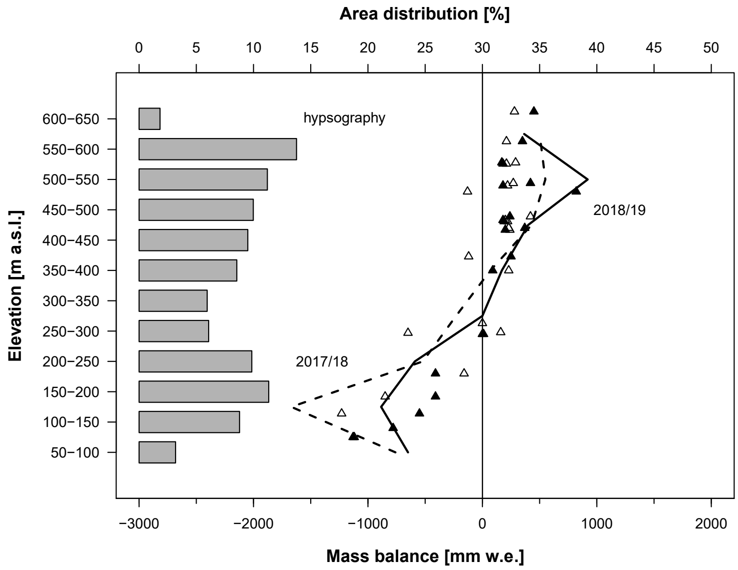


Figure 4.1.3 Glaciological balance versus geodetic balance for the whole observation period.

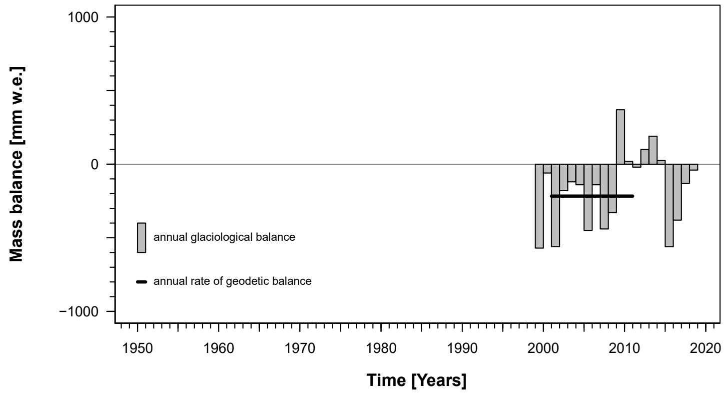
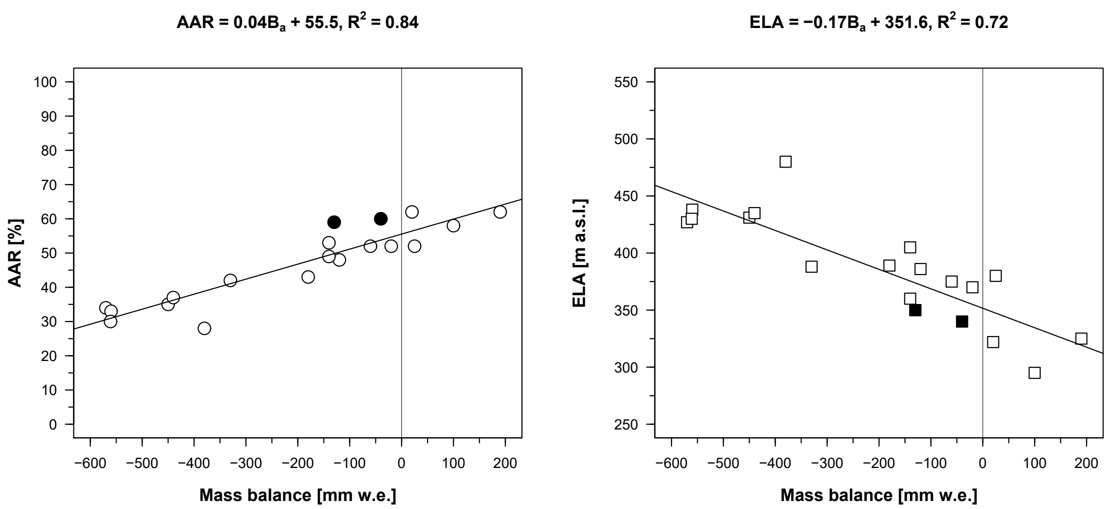


Figure 4.1.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Bahía del Diablo (ANTARCTICA)

4.2 MARTIAL ESTE (ARGENTINA/ANDES FUEGUINOS)

COORDINATES: 54.78° S / 68.40° W

Martial Este Glacier on 5 February 2019 (photograph taken by R. Iturraspe).

On the southern shore of Tierra del Fuego Island, facing the Beagle Channel, the Martial Glacier dominates the headwaters of the Buena Esperanza basin, whose main river is one of the water sources of Ushuaia city. This glacier has lost 75% of its area since the Little Ice Age.

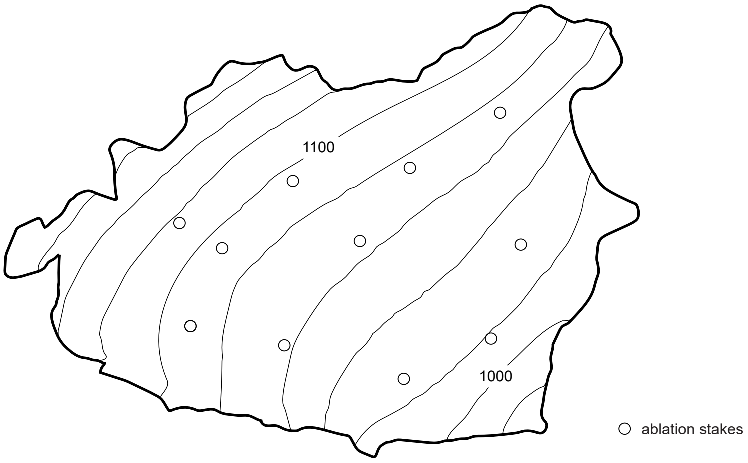
The Martial Este is one of the main ice bodies composing the Martial Glacier. The hydrological cycle starts in April and the maximum accumulation on the glacier usually succeeds in October/November. The mean annual air temperature at the ELA level (1,080 m a.s.l.) is –1.5 °C and the precipitation, well distributed over the whole year, reaches 1,300 mm (530 mm at the sea level).

After showing a stable behaviour for more than a decade, this glacier seems to resume a definite negative trend since 2017, losing 706 mm w.e. in that year, 225 mm w.e. in 2017/18, and 494 mm w.e. in 2018/19. These results indicate a three-year accumulative deficit of 1,425 mm w.e. The behaviour of the Martial Glacier is representative of the small cirque glaciers on the Argentinean side of Tierra del Fuego that have fronts higher than 950 m a.s.l. (Strelin & Iturraspe, 2007). Glaciers having a more developed ablation zone present higher mass loss.

This glacier monitoring is a collaborative research of the Water Agency of the Province of Tierra del Fuego and the National University of Tierra del Fuego.

Figure 4.2.1 Topography and observation network and mass-balance maps 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19

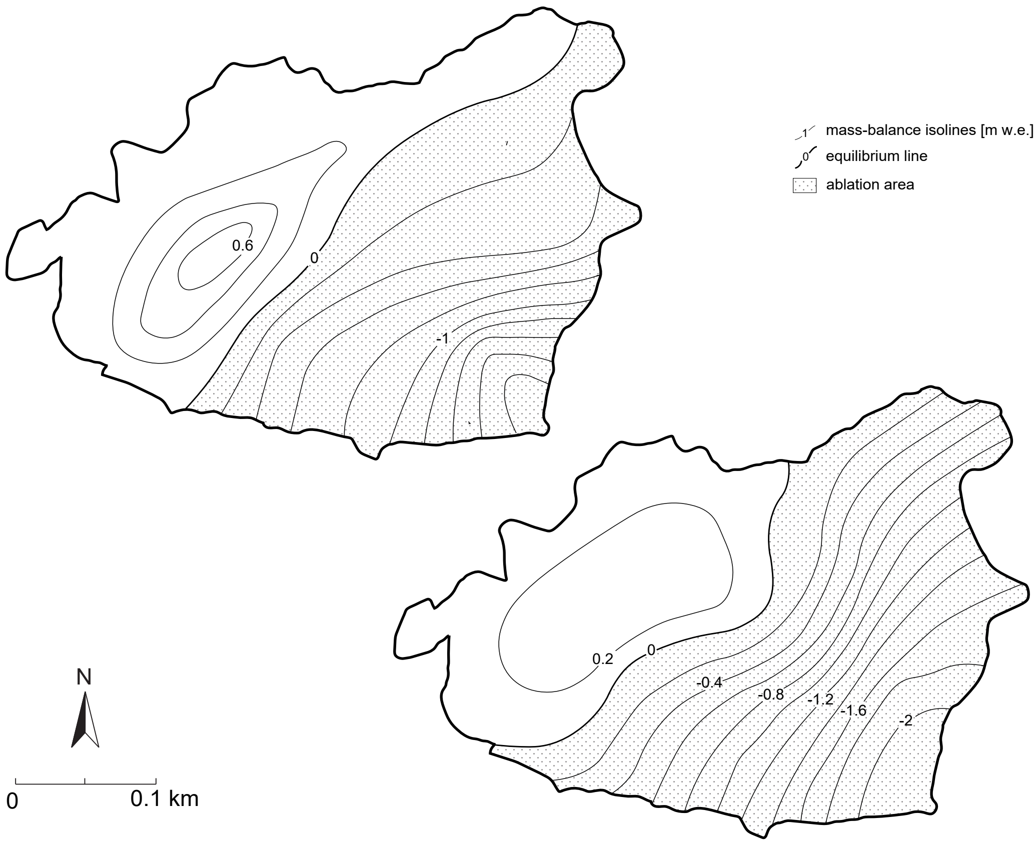


Figure 4.2.2 Mass balance versus elevation for 2017/18 and 2018/19.

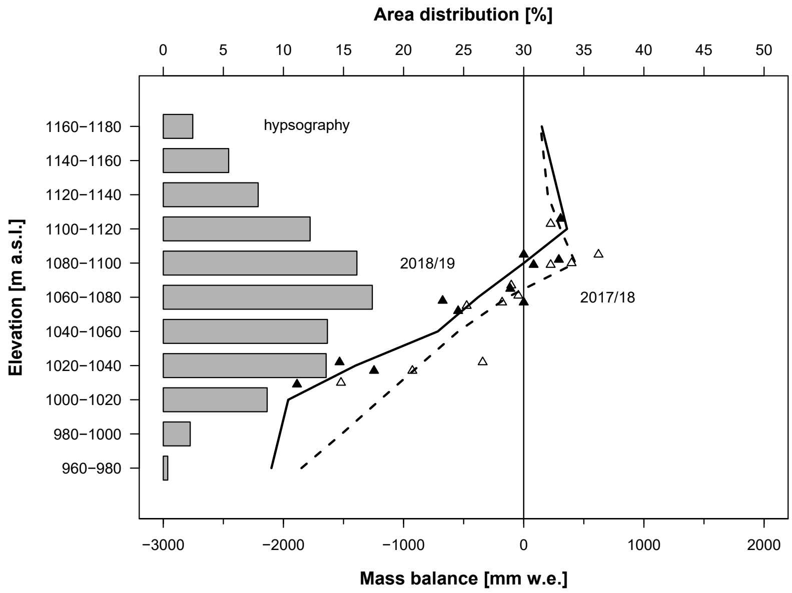


Figure 4.2.3 Glaciological balance versus geodetic balance for the whole observation period.

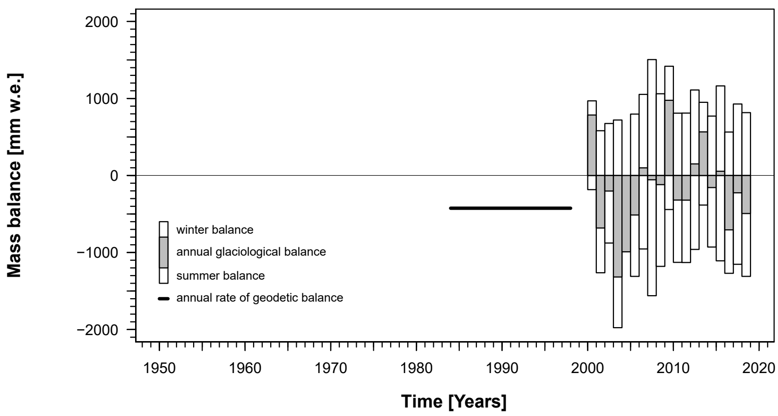
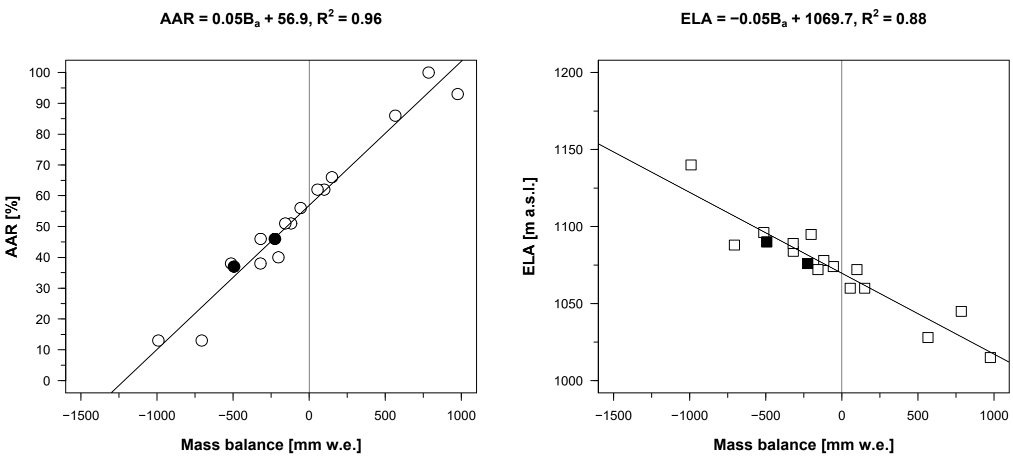


Figure 4.2.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Martial Este (ARGENTINA)

4.3 AGUA NEGRA (ARGENTINA/DESERT ANDES)

COORDINATES: 30.16° S / 70.80° W

Agua Negra Glacier on 17 January 2015 (photograph taken by P. Pitte).

Glaciar Agua Negra is a small, southeast facing mountain glacier located 2 km away from an international dirt route that links the cities of San Juan, in Argentina, with La Serena, in Chile. The area is in the Arid Diagonal that crosses South America from northwest to southeast, so vegetation is very scarce and limited to peat bogs located below 4,300 m a.s.l. Glaciated mountains reach over 5,000 m a.s.l. and nearby La Majadita extinct volcano is 6,280 m a.s.l.

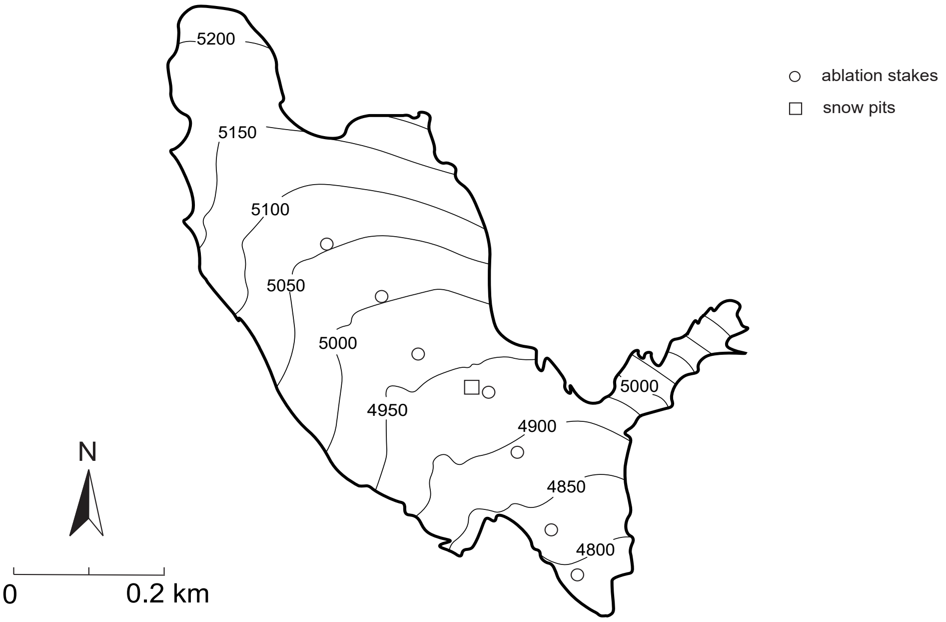
Glaciar Agua Negra covered 1.02 km² and was 2.0 km long (2013), with an elevation range between 5,250 and 4,750 m a.s.l. The glacier is located in a well-defined cirque with no contact with nearby ice masses and almost no debris-cover. Mean annual temperature at Capayan station, in the glacier front, is around –4.5 °C, with precipitation below 0.5 m a^{-1} and concentrated during austral winter. Radiation reaches over 440 W m^{-2} and mean humidity is 32%. The glacier is completely blanketed with penitentes, usually 0.5–3 m high, which normally get snow-covered in winter. A small proglacial intermitent lake is formed in the glacier forefield, surrounded by a mass of stagnant debris-covered ice which is currently downwasting.

Due to its relative good access by Andean standards, some observations including geophysical soundings had been carried out, indicating a maximum depth of 55 m (Milana & Maturano, 1999). Geodetic mass-balance measurements derived from ASTER DEMs for 2000–2018 indicate a –430 mm w.e. a^{-1} loss (Dussaillant and others, 2019).

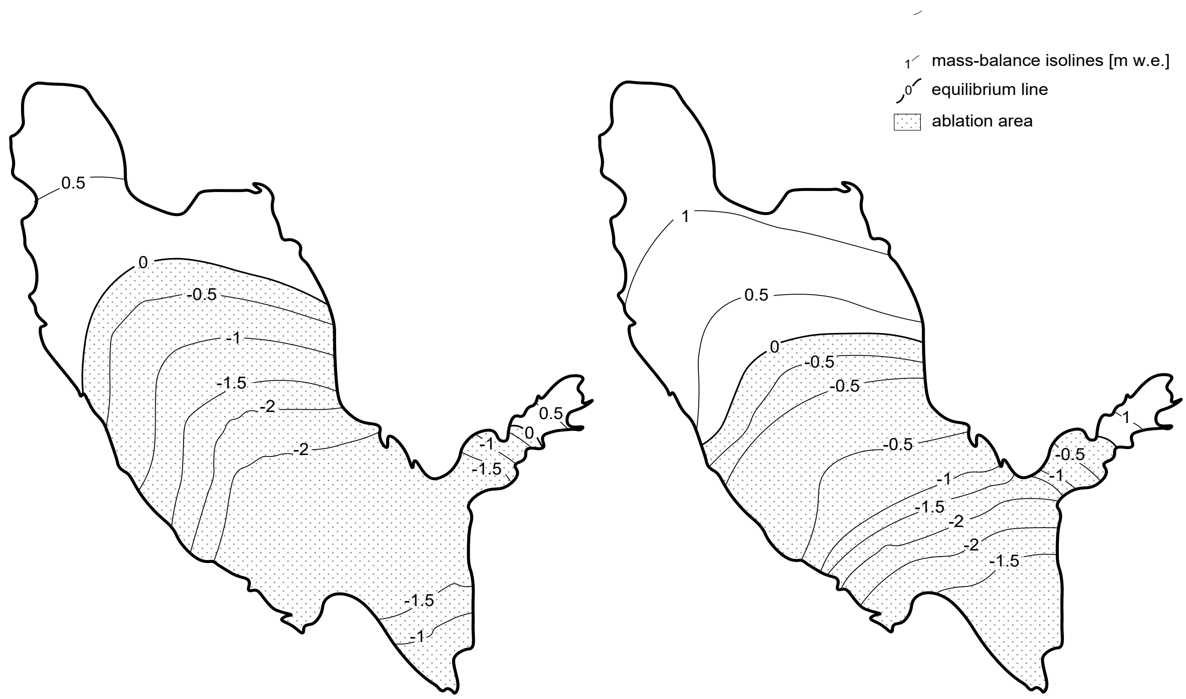
Glaciological mass-balance measurements were initiated in spring 2014 and the data available for 2017/18 and 2018/19 are –873 and –163 mm w.e, respectively, which is in line with the decadal mass-loss trend observed in most ice masses in this region.

Figure 4.3.1 Topography and observation network and mass-balance maps 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Agua Negra (ARGENTINA)

Figure 4.3.2 Mass balance versus elevation for 2017/18 and 2018/19.

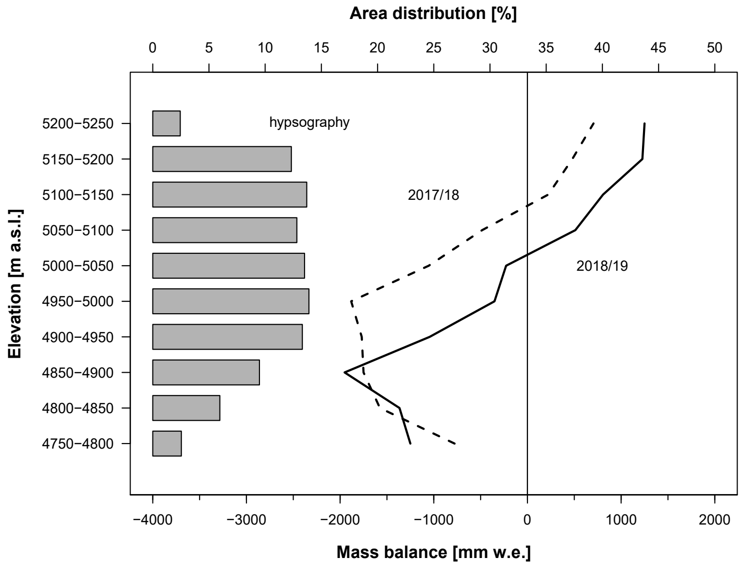


Figure 4.3.3 Glaciological balance versus geodetic balance for the whole observation period.

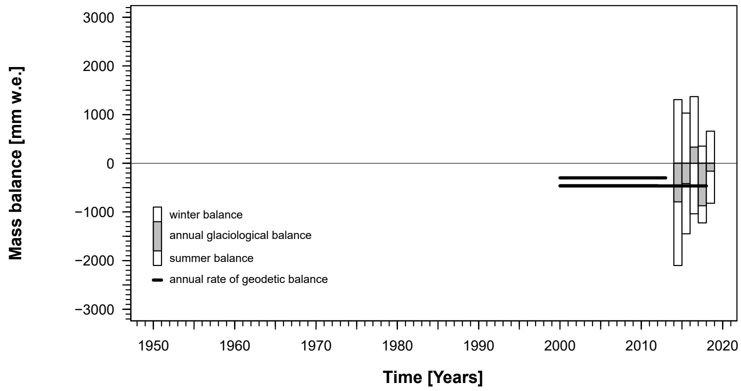
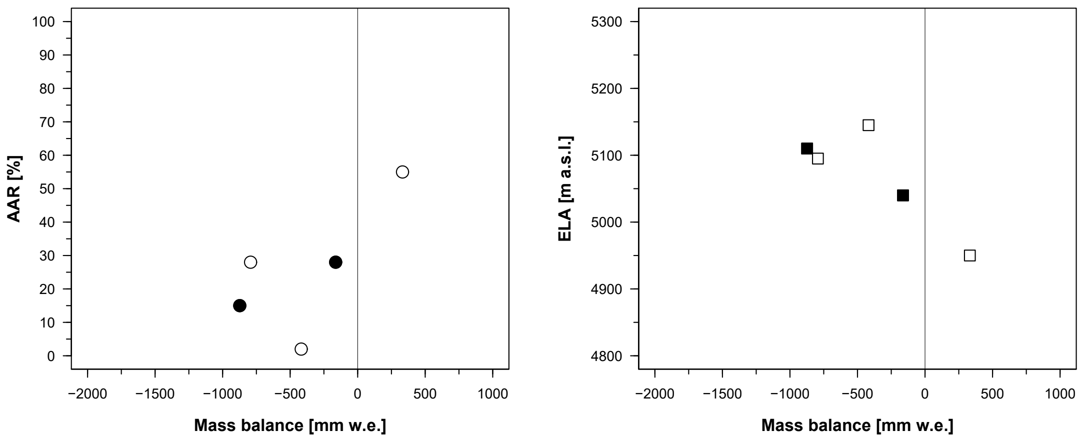


Figure 4.3.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Agua Negra (ARGENTINA)

4.4 HINTEREISFERNER (AUSTRIA/ALPS)

COORDINATES: 46.80° N / 10.77° E

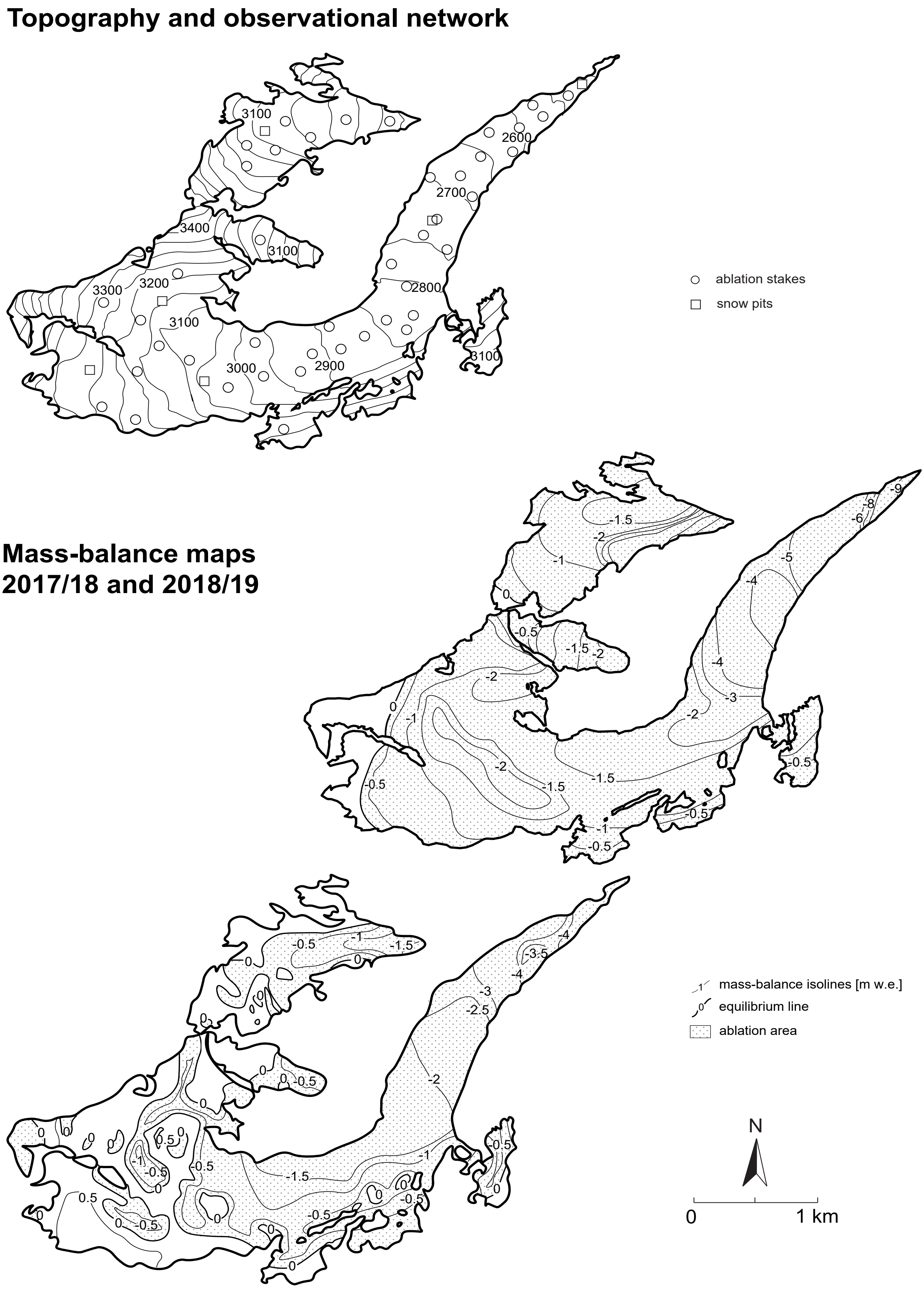
Hintereisferner, aerial view from 28 August 2019 (photograph provided by R. Prinz).

Hintereisferner is a 6.4 km long valley glacier in the Rofental (Ötztal Alps, Austria). Its surface area is 6.2 km² (2017), descending from the upper slopes of Weißkugel (3,739 m a.s.l.) to 2,460 m a.s.l. The glacier accumulation area is mainly orientated east and the glacier tongue northeast. Glacier mass balance has been derived using the glaciological method (fixed date) since 1953. A permanent terrestrial LIDAR allows geodetic mass-balance surveys with high temporal resolution. The closest continuous long-term weather station is Vent (1,900 m a.s.l), 11 km northeast of Hintereisferner terminus.

The surface mass balance for the 2017/18 hydrological year ranked third in the negative record with a loss of –1,963 mm w.e. (–2,084 mm w.e. geod.), an ELA at 3,500 m a.s.l. and an AAR of 7%. The slightly above normal winter accumulation started to melt already in the anomalously warm spring. The hot and dry summer of 2018 resulted in vast ice ablation and only isolated snow patches remained in the highest surface depressions.

By contrast, the surface mass balance for the 2018/19 hydrological year was moderately negative with a loss of –680 mm w.e. (–687 mm w.e. geod.), which is around the long-term mean since 1953. The ELA was at 3,213 m a.s.l. and the AAR resulted in 36%. Substantial winter snow and a cold spring led to a sustained high albedo of large glacier parts until early August. Thus, massive ice ablation was impeded although the summer 2019 was the warmest on record with 3.7 °C above the long-term mean of 1981–2010.

Figure 4.4.1 Topography and observation network and mass-balance maps 2017/18 and 2018/19.



Hintereisferner (AUSTRIA)

Figure 4.4.2 Mass balance versus elevation for 2017/18 and 2018/19.

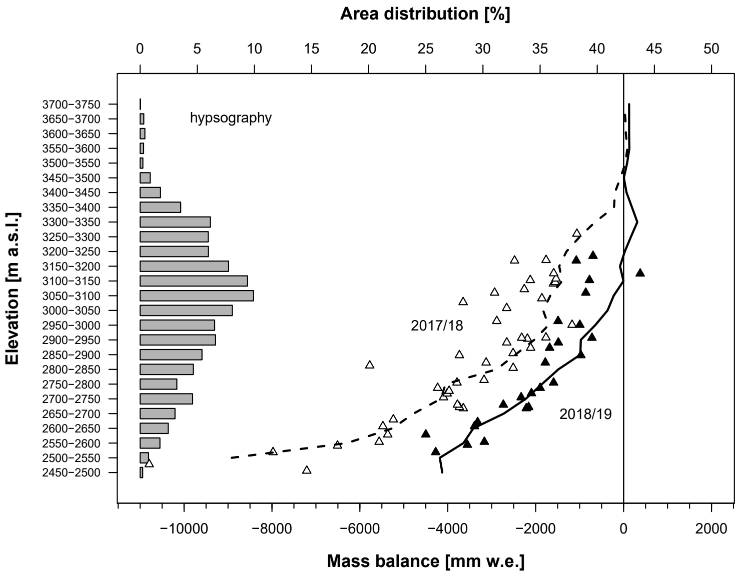


Figure 4.4.3 Glaciological balance versus geodetic balance for the whole observation period.

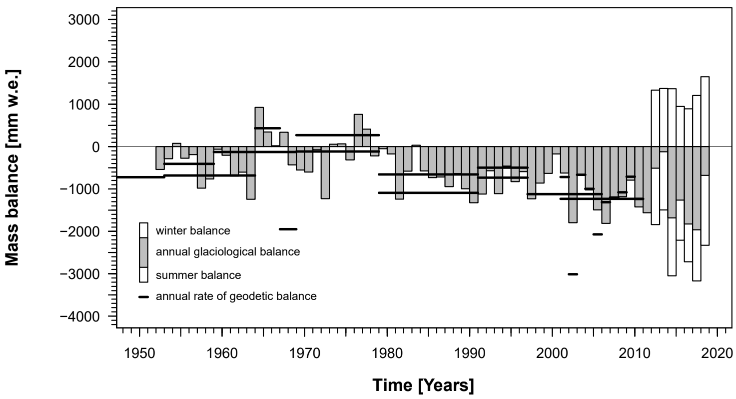
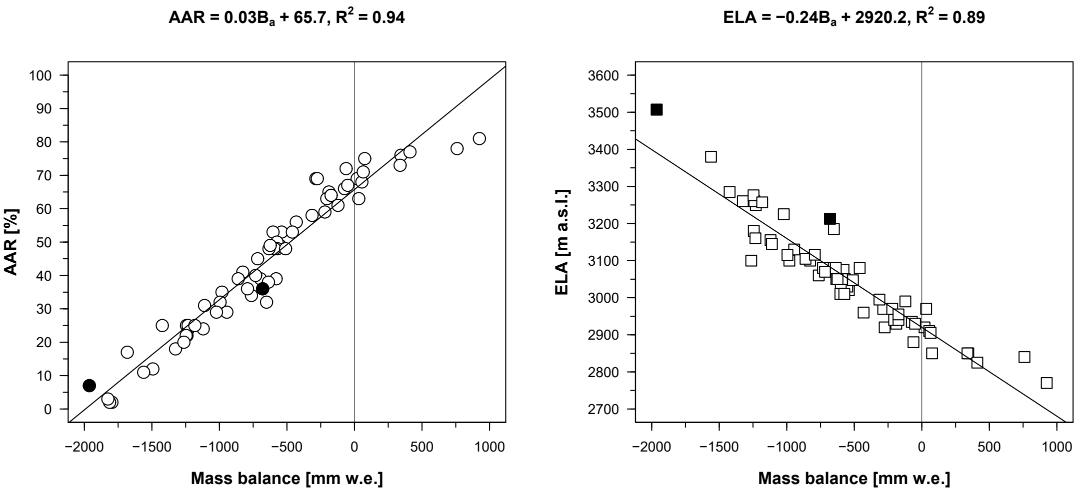


Figure 4.4.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Hintereisferner (AUSTRIA)

4.5 URUMQI GLACIER NO. 1 (CHINA/TIEN SHAN)

COORDINATES: 43.08° N / 86.82° E

Urumqi Glacier No. 1 on 30 April, 2020 (photograph taken by C. Xu).

Urumqi Glacier No. 1 is a valley glacier located 100 km south of Urumqi city, northwest China. As in 1959, the starting date of observation on Urumqi Glacier No. 1, it was composed by two branches. After decades of constant recession, the two branches separated into two small glaciers in 1993, which are now referred to as the east and west branches of Urumqi Glacier No. 1. The area of the glacier was determined by a survey in 2012 as being 1.021 km^2 for the east branch and 0.573 km^2 for the west branch. The latest radar echo-sounding measurements were conducted on the glacier in August 2012, which indicated its maximum thickness as 124.0 ± 5 m.

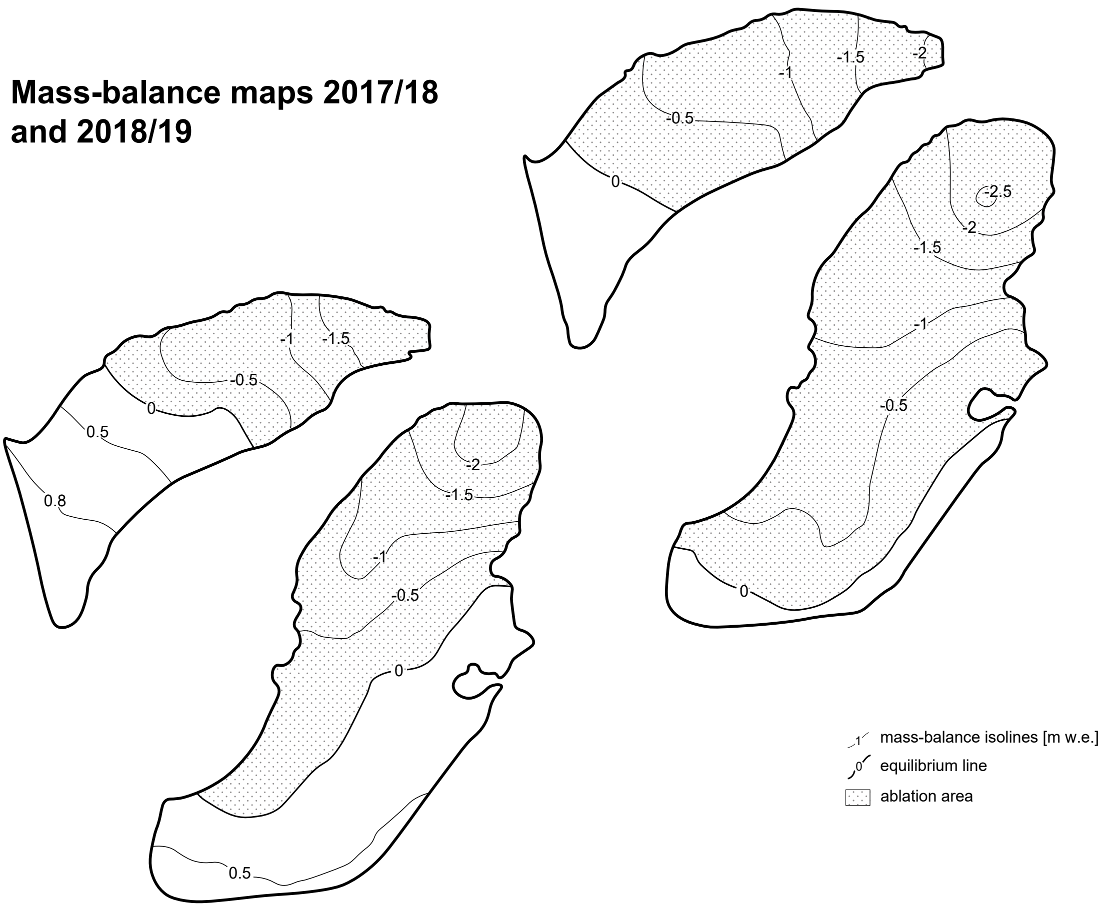
For Urumqi Glacier No. 1, accumulation and ablation both take place primarily during the warm season. For the 2018/19 mass-balance year (from September 1, 2018 until August 31, 2019), the total precipitation observed at the nearby meteorological station (Daxigou Meteorological Station, 3,539 m a.s.l.) was 645 mm; mean annual air temperature was –4.6 °C. Corresponding mean air temperature and precipitation at ELA (4,047 m a.s.l.) of Urumqi Glacier No. 1 for 2018/19 was evaluated as ~ –7.92 °C (with lapse rate as –0.0065 °C m^{-1}) and ~885 mm (with vertical gradient as 22 mm 100 m^{-1} in non-glaciated area and 10% 100 m^{-1} on the glacier surface), respectively.

The mass balances of Urumqi Glacier No. 1 were –711 mm w.e. in 2017/18 and –272 mm w.e. in 2018/19, respectively. To obtain the glacier-wide mass balance, the specific value observed at each stake was used for interpolation, together with simulated values obtained using the simple energy-balance model (Oerlemans, 2011) in areas without measurements.

Figure 4.5.1 Topography and observation network and mass-balance maps 2017/18 and 2018/19.

Topography and observational network

Mass-balance maps 2017/18 and 2018/19



Urumqi Glacier No. 1 (CHINA)

Figure 4.5.2 Mass balance versus elevation for 2017/18 and 2018/19, West Branch on the left and East Branch on the right.

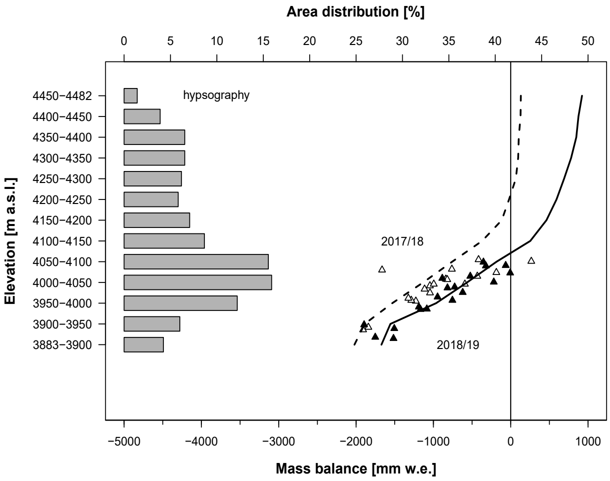


Figure 4.5.3 Glaciological balance versus geodetic balance for the whole observation period.

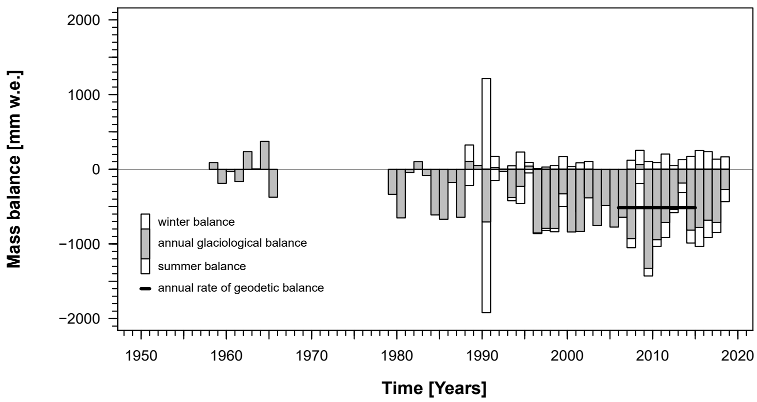
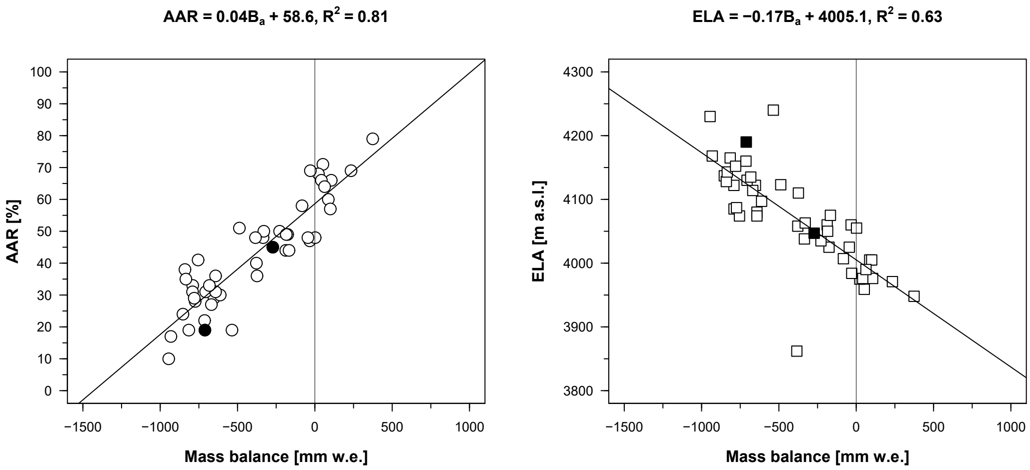


Figure 4.5.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Urumqi Glacier No. 1 (CHINA)

4.6 CONEJERAS (COLOMBIA/CORDILLERA CENTRAL)

COORDINATES: 4.82° N / 75.37° W

Photograph taken by F. Rojas on 5 September 2019.

Conejeras Glacier is a small glacier (0.105 km^2, 2019) and part of the ice cap (0.52 km^2, 2019) located at the top of Santa Isabel glacier-volcano in the northern Andes. Along with the glacierized volcanos Nevado del Ruiz and Nevado del Tolima, it is surrounded by the "Páramo" ecosystem and Andean forests. Conejeras, which has a minimum elevation of 4,680 m a.s.l. and a maximum of 4,893 m a.s.l. is situated to the northwest of Santa Isabel.

Conejeras mass balance has been calculated monthly with the direct glaciological method since April 2006: field measurements using 14 stakes distributed along the glacier every 50 m of altitude; six of them located at the lower glacier, could no longer be monitored due to glacier retreat. Mass-balance calculation also has been supplemented by ten meteorological and hydrological stations, extending down valley to 2,700 m a.s.l. to support research on high-mountain systems. Since 2006, Conejeras Glacier has shown a permanently negative mass balance (with cumulative loss of –46 m w.e).

The mass balance was –3,411 mm w.e. in 2017/18 and –4,982 mm w.e. in 2018/19. The (theoretical) ELA was located at 4,826 m a.s.l (AAR < 1%) and 4,911 m a.s.l. (AAR < 1%) by the end of 2018 and 2019, respectively. The glacier reacts swiftly to atmospheric changes and is strongly influenced by climatic variability generated by the Intertropical Convergence Zone (ITCZ) and the El Niño-Southern Oscillation (ENSO), which impacted this glacier from late 2015 to early 2016. The recent appearance of volcanic ash on its surface is another important factor that influences its melting. Weather patterns in these mountains lead to an annual average precipitation of 1,325 mm (2018–2019), 94% relative humidity on average, and a mean temperature range between 0.5 ºC and 1.3 °C (2018). The maximum ice thickness is estimated to be 20.2 m, located in the lower range (2019).

Figure 4.6.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

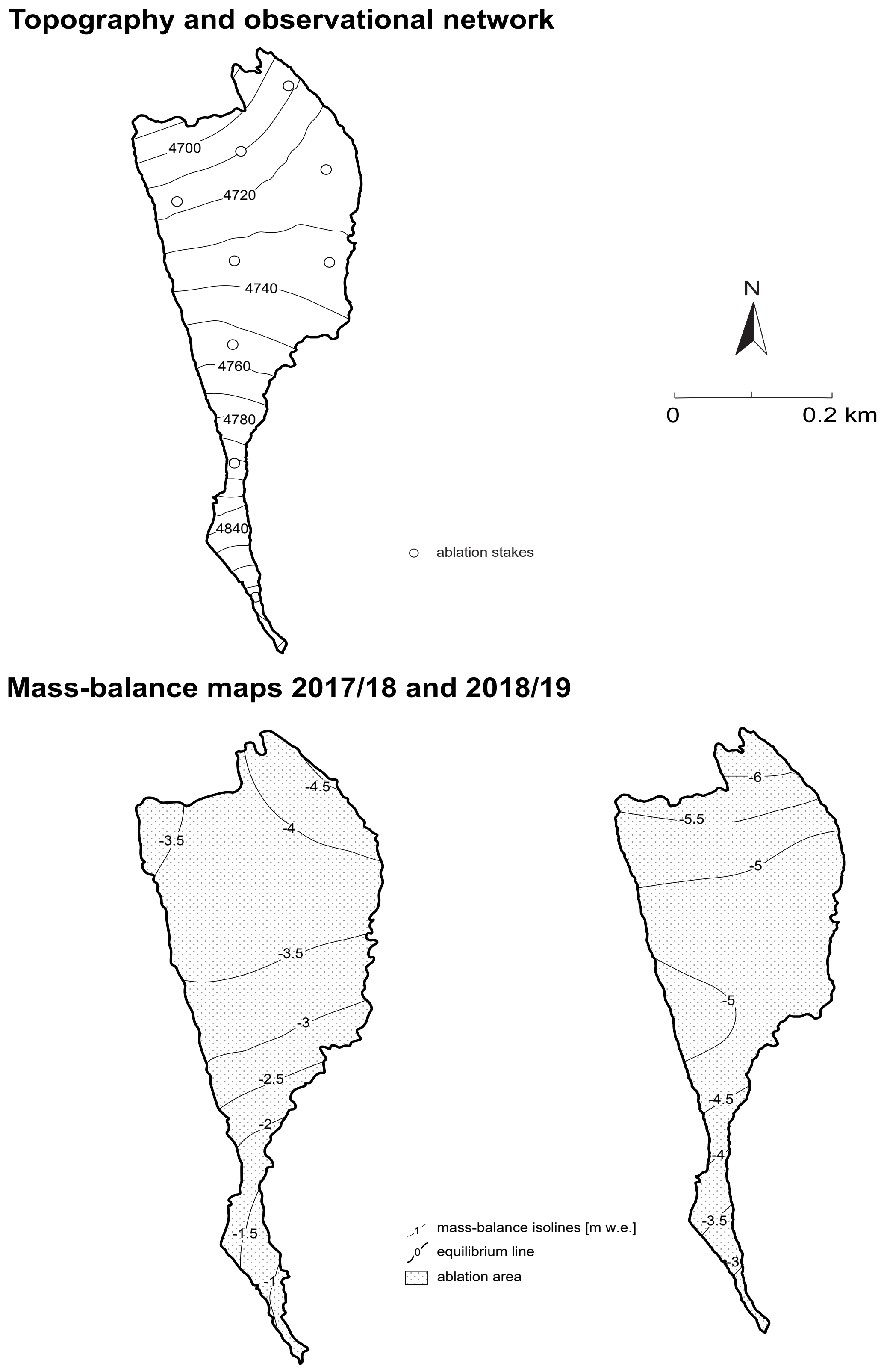


Figure 4.6.2 Mass balance versus elevation for 2017/18 and 2018/19.

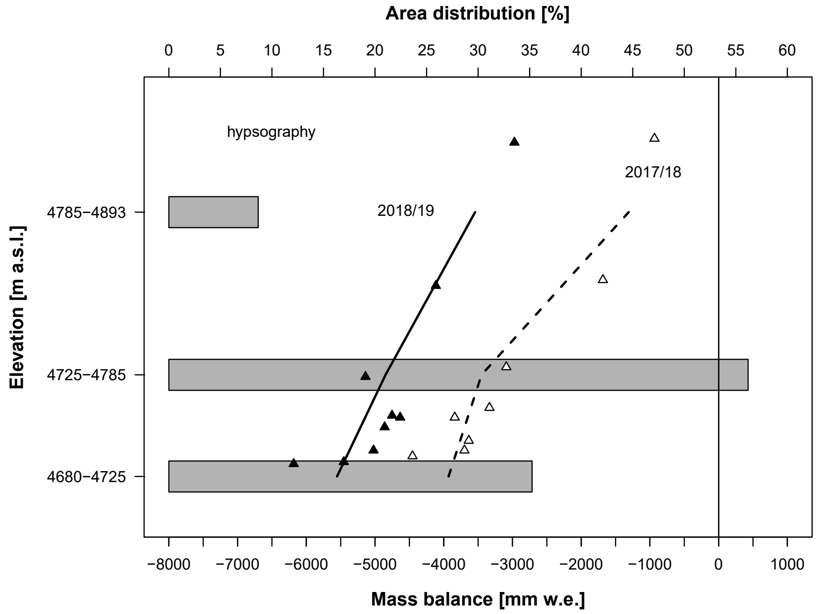


Figure 4.6.3 Glaciological balance versus geodetic balance for the whole observation period.

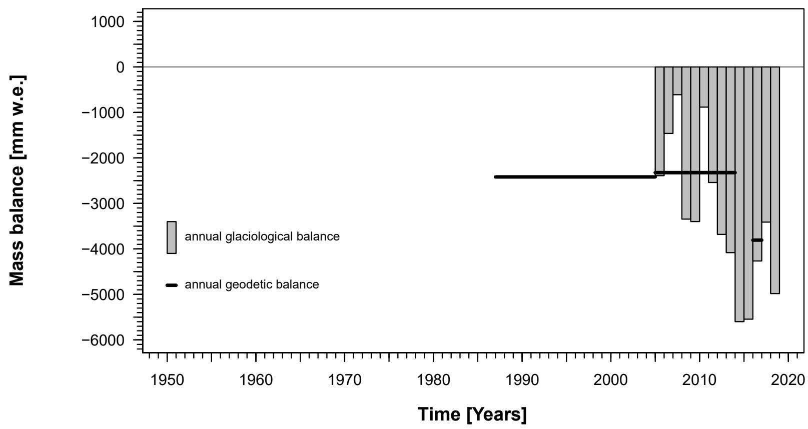
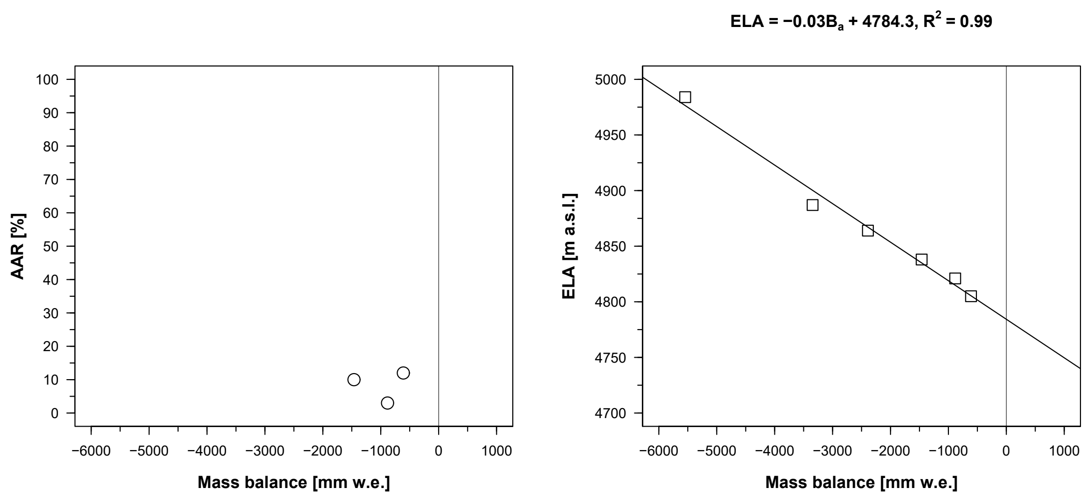


Figure 4.6.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Conejeras (COLOMBIA)

4.7 LA MARE (ITALY/ALPS)

COORDINATES: 46.43° N / 10.63° E

Photograph taken from Cima Nera by L. Carturan on 28 September 2018.

The La Mare Glacier is a valley glacier with compound basin located in the Ortles-Cevedale Group (Eastern European Alps, Italy). Its area is 3.19 km² (August 2019) and is composed of two sub-units, which separated in summer 2019. The elevation ranges between 2,771 and 3,769 m a.s.l. (Mount Cevedale), and the median elevation is 3,290 m a.s.l. (considering both units). The mean annual air temperature at this elevation is about –4 to –5 °C and precipitation averages 1,500 mm.

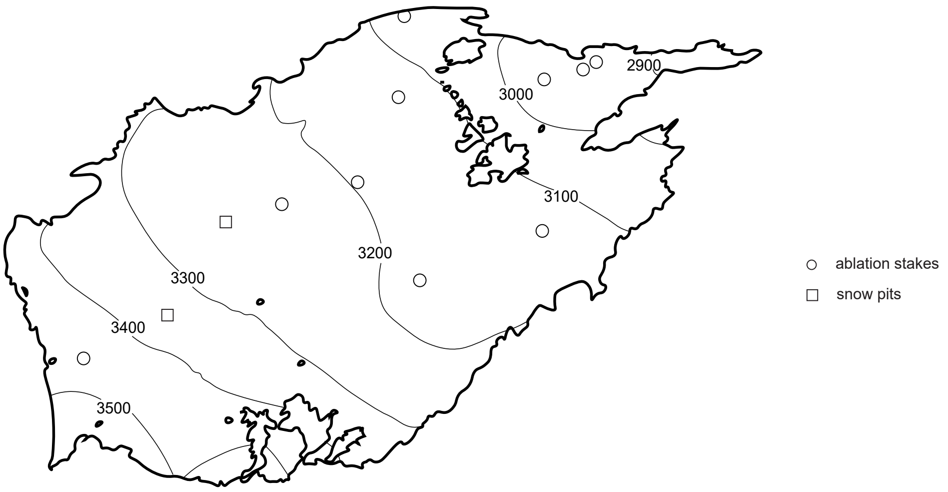
The mass-balance measurements started in 2003, to ensure mass-balance observations in the area of the vanishing Careser Glacier (Carturan, 2016). Mass-balance measurements are carried out in the southern branch of the glacier, now independent, which is larger and more accessible, and which feeds the main ablation tongue. This branch has an area of 1.9 km², is mainly exposed to northeast, and has a median elevation of 3,219 m a.s.l. The glacier still keeps an accumulation area (the mean AAR was 23% in the observation period), which however is much smaller than required for balanced-budget conditions. Consequently, the mass balance has been mostly negative (–893 mm w.e. a^{-1} on average from 2003 to 2019), leading to a considerable loss in area and volume. The morphological changes are particularly rapid in the lower ablation area, which tends to separate from the rest of the glacier due to the progressive outcrop of a bedrock step at 3,100 m a.s.l.

In 2017/18 the mass balance was negative (–1,185 mm w.e.), mainly due to long and intense summer ablation, and in spite of above-average winter accumulation (16% higher than the 2003–2017 mean). The ELA was at 3,562 m a.s.l. and the AAR was 8%.

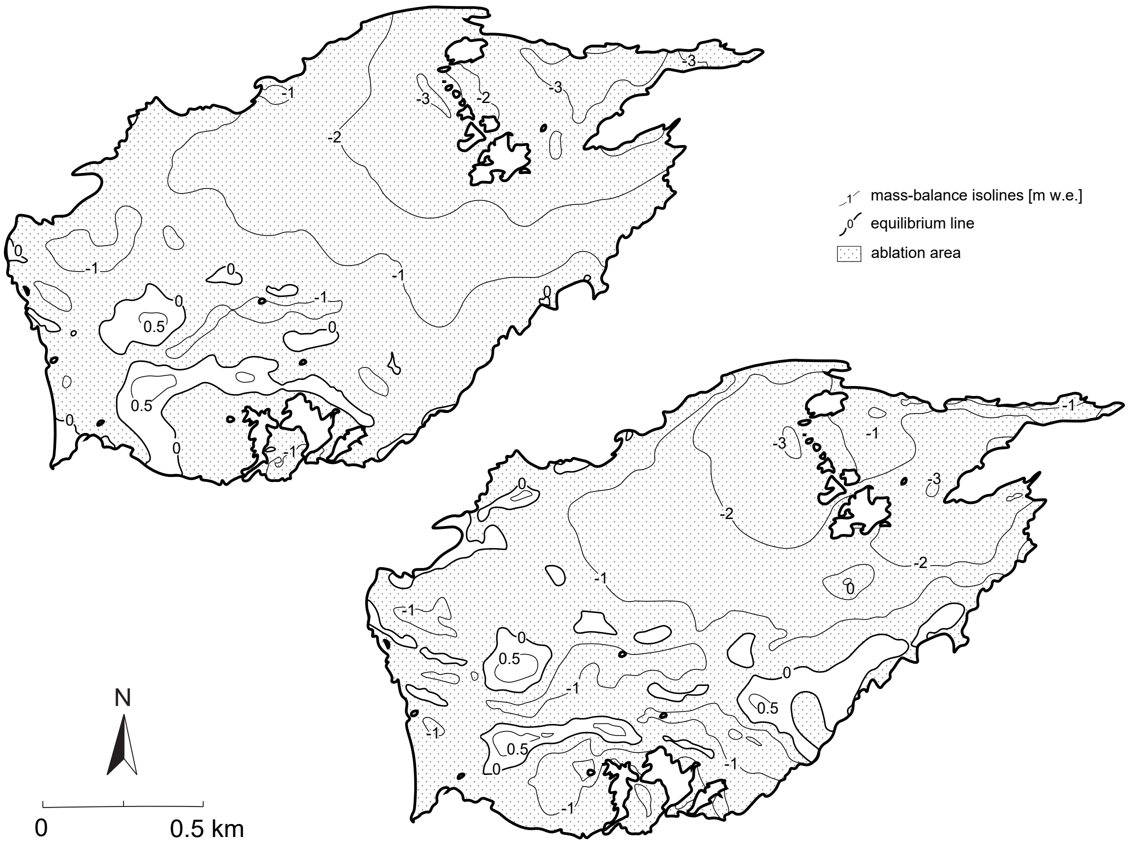
Similarly, in spite of above-average winter snow accumulation (20% larger than the mean), in 2018/19 the mass balance was negative (–1,052 mm w.e.). This was due to intense ablation during summer 2019, but also during fall 2018, when about 400 mm w.e. net ablation occurred at the median elevation of the glacier. The ELA was above the maximum elevation (3,586 m a.s.l.) and the AAR was 10%.

Figure 4.7.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



La Mare (ITALY)

Figure 4.7.2 Mass balance versus elevation for 2017/18 and 2018/19.

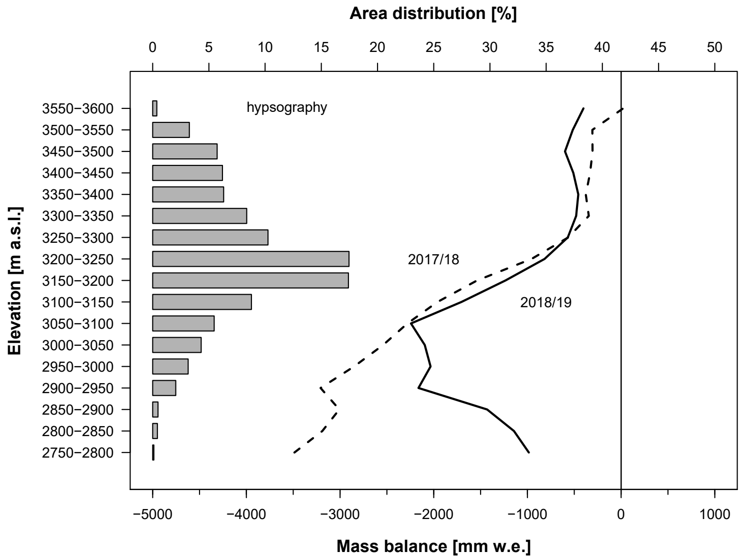


Figure 4.7.3 Glaciological balance versus geodetic balance for the whole observation period.

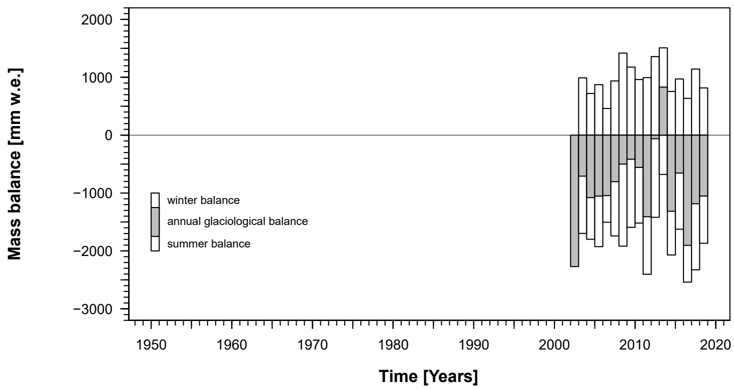
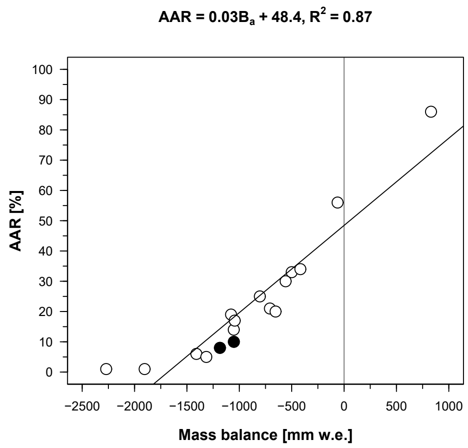
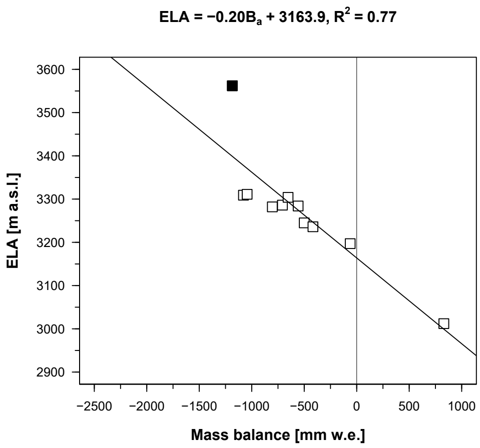


Figure 4.7.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.





La Mare (ITALY)

4.8 TSENTRALNIY TUYUKSUYSKIY (KAZAKHSTAN/TIEN SHAN)

COORDINATES: 43.05° N / 77.08° E

Tuyuksuyskiy glacier on 27 September 2019 (photograph taken by N. E. Kassatkin).

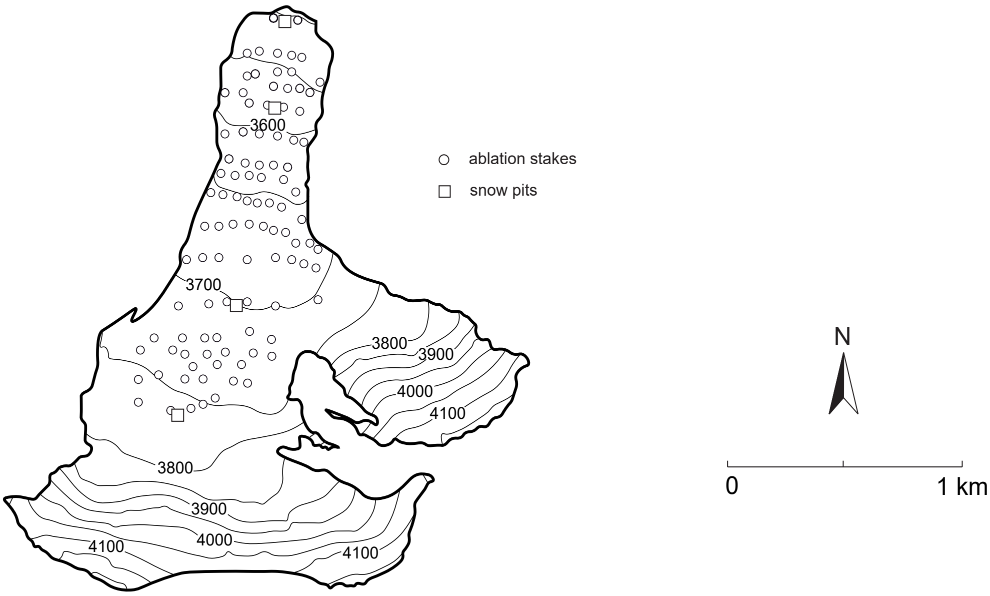
The Tuyuksu valley glacier is located on the northern slope of the Zailiyskiy Alatau ridge. The glacier is considered to be cold to polythermal and is surrounded by continuous permafrost. Its debris-free surface area amounted to 2.256 km^2 as of 2017.

The average annual air temperature at the ELA was –7.4 °C, the annual sum of precipitation at the Tuyuksu meteorological station was equal to 863 mm, 34% of this amount was passed on as precipitation during the summer period. The average air temperature during the warm season (June to September) at the Tuyuksu station amounted to 5.3 ºC, which was 1.0 ºC above the average for 1972–2017, while the annual sum of precipitation for the warm season was 175 mm less than the average for a specified period.

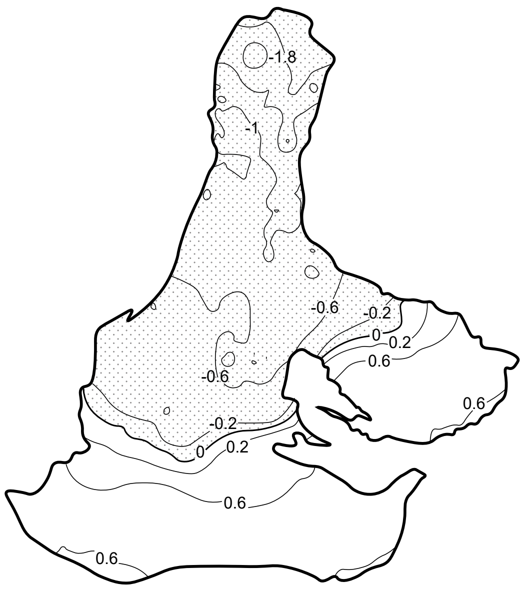
As a result of these conditions, the glacier mass balances for 2017/18 and 2018/19 were –75 mm and –580 mm w.e., respectively. Corresponding ELA (AAR) values were 3,780 m a.s.l. (51%) and 3,900 m a.s.l. (32%). The average annual balance for the 1972–2017 period was –515 mm w.e. a^{-1}.

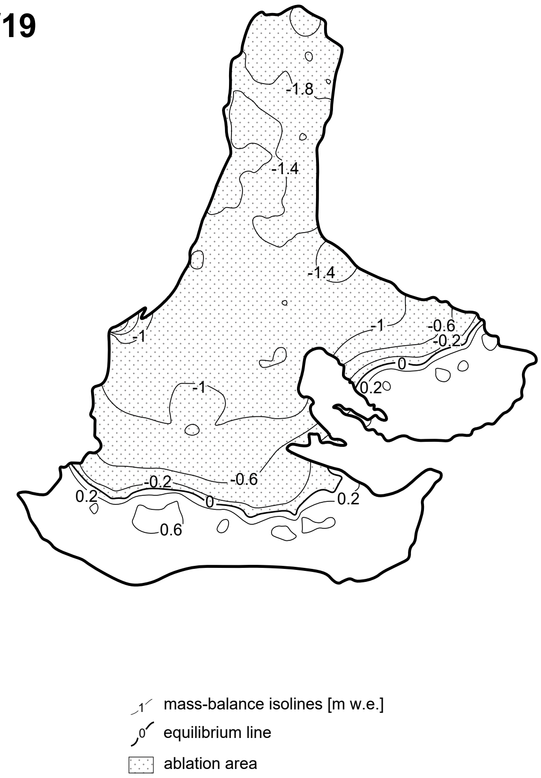
Figure 4.8.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass balance maps 2017/18 and 2018/19





Tsentralniy Tuyuksuyskiy (KAZAKHSTAN)

Figure 4.8.2 Mass balance versus elevation for 2017/18 and 2018/19.

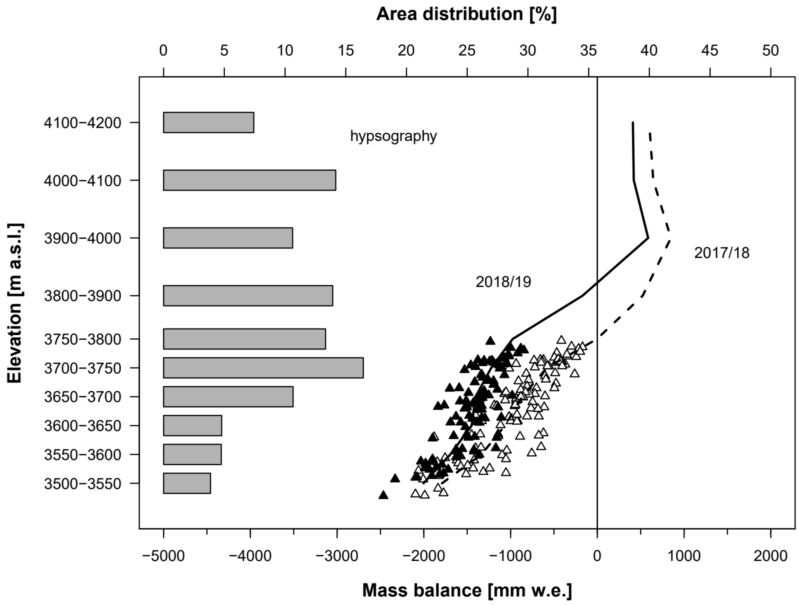


Figure 4.8.3 Glaciological balance versus geodetic balance for the whole observation period.

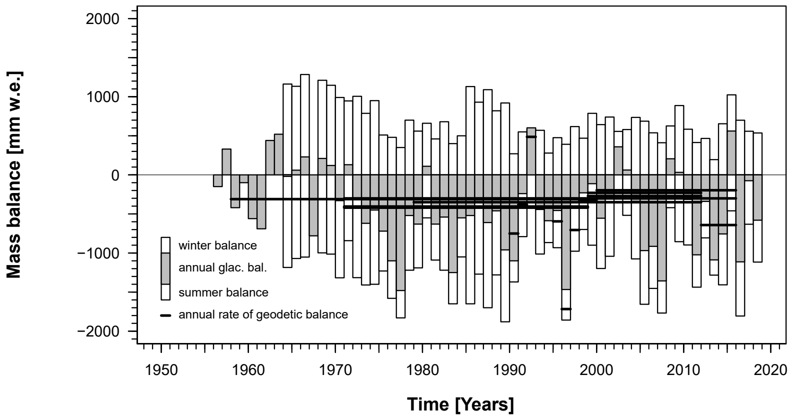
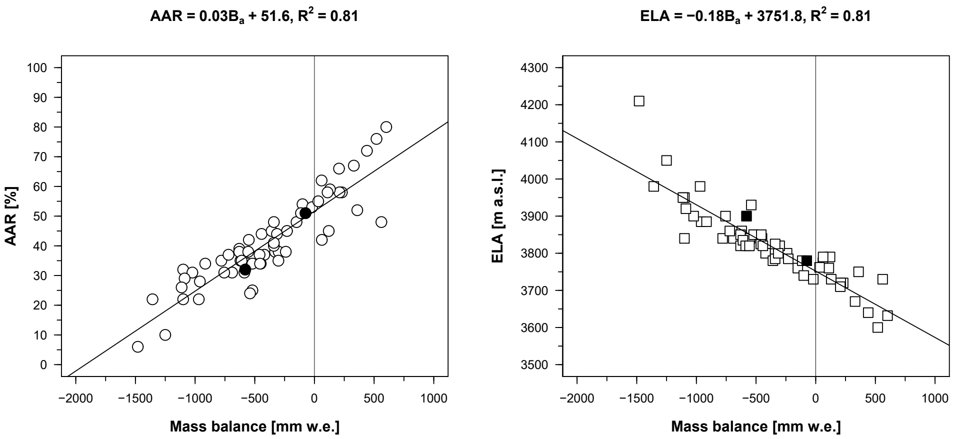


Figure 4.8.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



4.9 GOLUBIN (KYRGYZSTAN/TIEN SHAN)

COORDINATES: 42.46° N / 74.50° E

Golubin glacier on 24 August 2019 (photograph taken by E. Pohl).

Golubin Glacier is a mountain glacier located in the Ala-Archa catchment, in the Kyrgyz Ala-Too, Northern Tien Shan. It has an area of ~5.4 km^2 (in 2018) and extends over an altitudinal range between 3,300 and 4,400 m a.s.l. The mass balance of Golubin Glacier was measured using the glaciological method from 1969 to 1994, and a continuous and modern monitoring programme was re-established in 2010. First length measurements date back to 1861. A meteorological station was installed in 2013 and is situated at an altitude of 3,300 m a.s.l. at a distance of 500 m away from Golubin Glacier (Schöne et al., 2013). Two additional climate stations, called Alplager and Baitik, are located in the Ala-Archa catchment at lower altitudes of 2,340 and 1,580 m a.s.l., respectively.

Model reconstruction indicate that Golubin Glacier lost –170 ± 450 mm w.e. a$^{–1}$ for the entire period of 1901–2016. Mass loss increased in the second half of the century with an average mass balance of –210 ± 420 mm w.e. a^{-1} from 1950–2018 with the most negative value simulated for 2008. Direct measurements for the past decade confirm this tendency with a mass loss of –280 ± 170 mm w.e. a$^{–1}$ (2011–2018).

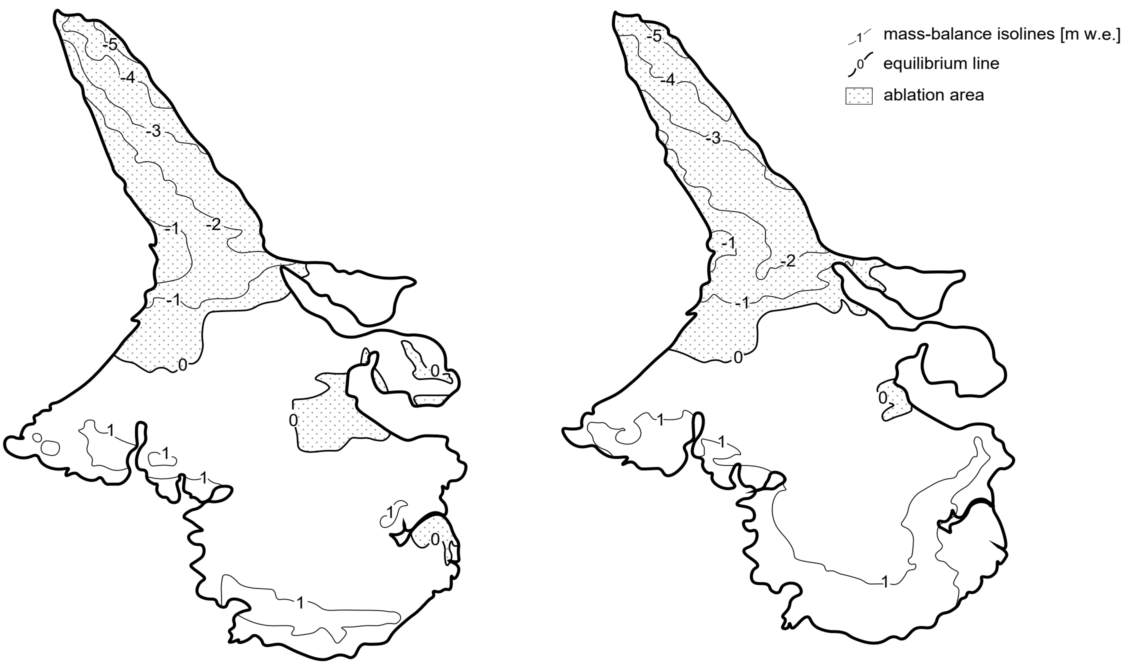
Measurements have been re-initiated in 2010 and the glacier has since been continuously monitored through joint efforts of the Central Asian Institute of Applied Geosciences (CAIAG), Kyrgyz Hydromet, the Geoforschungszentrum Potsdam (GFZ), and the University of Fribourg as part of the Central Asian Water (CAWa), the Capacity Building and Twinning of Climate Observation Systems (CATCOS), and the Cryospheric Climate Services for improved Adaptation (CICADA) projects.

Mass balances for 2017/18 and 2018/19 were –50 mm and –78 mm w.e., respectively. Corresponding ELA values were 3,785 m and 3,795 m a.s.l., respectively, with an AAR of 72% in both years.

Figure 4.9.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network

Mass-balance maps 2017/18 and 2018/19



Golubin (KYRGYZSTAN)

Figure 4.9.2 Mass balance versus elevation for 2017/18 and 2018/19.

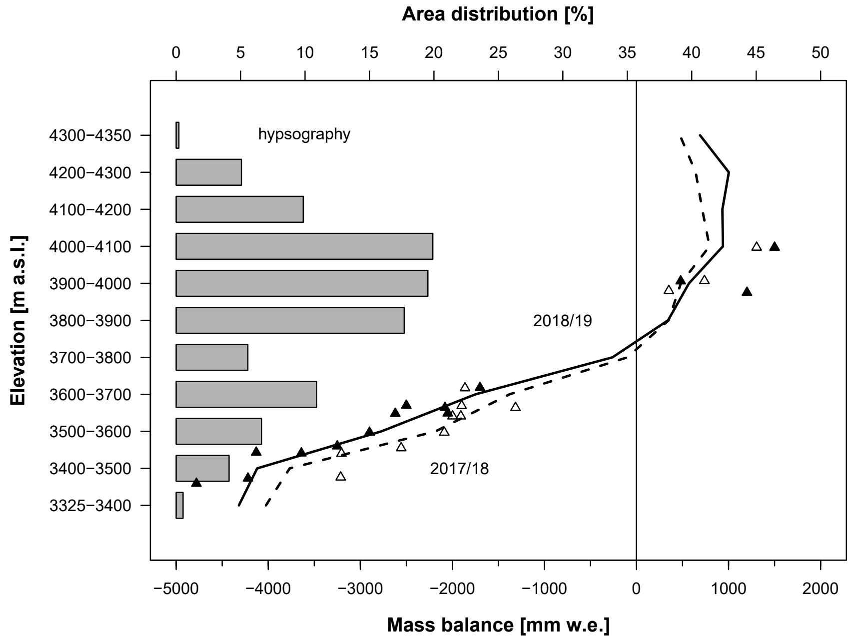


Figure 4.9.3 Glaciological balance versus geodetic balance for the whole observation period.

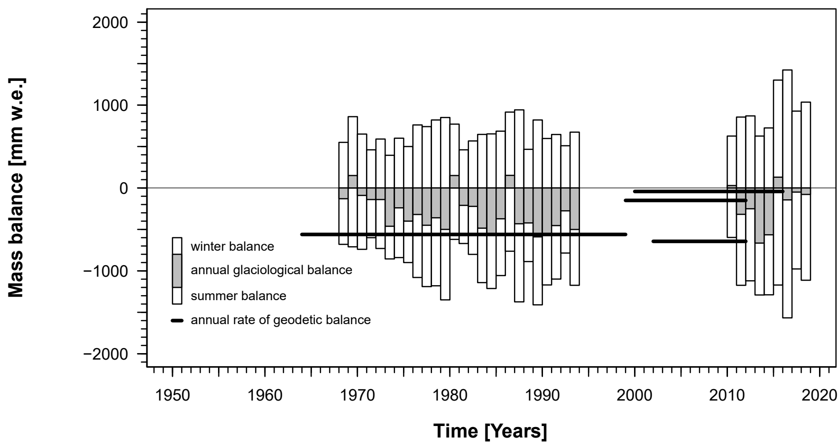
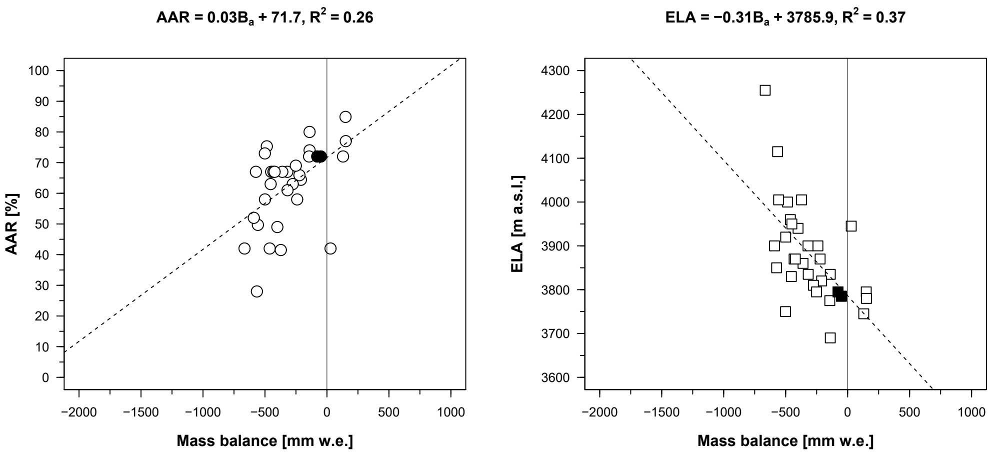


Figure 4.9.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Golubin (KYRGYZSTAN)

4.10 YALA (NEPAL/HIMALAYA)

COORDINATES: 28.24° N / 85.62° E

Photograph of Yala glacier taken by S.P. Joshi on 18 November 2019.

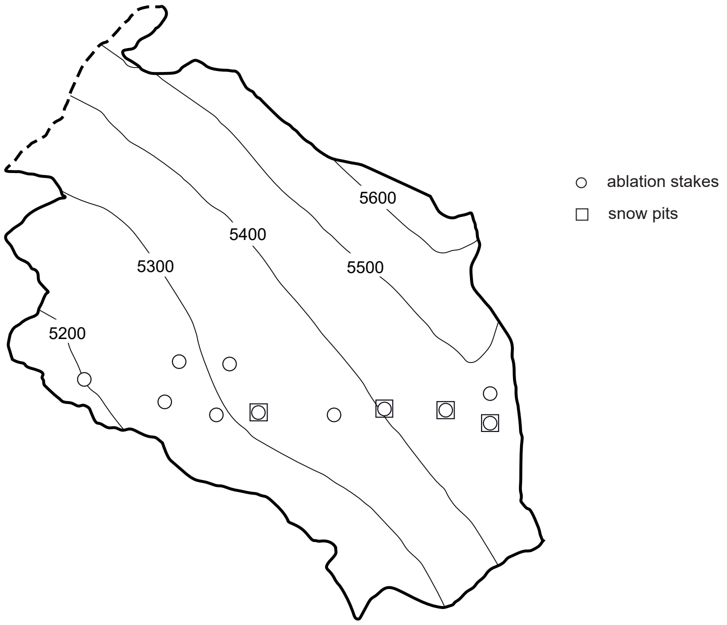
Yala Glacier is located in the Langtang Valley, Rasuwa district of Nepal 70 km north of Kathmandu. It is a plateau-type glacier with an altitude range from 5,661 to 5,168 m a.s.l. In 2012, the length and area of Yala Glacier were about 1.4 km and 1.61 km^2, respectively. The glacier is mainly oriented southwest, and has many ice cliffs facing south and southwest. The nearest weather station with long-term data is in Kyangjing (3,920 m a.s.l.), which is about 6 km horizontal distance and southwest of the Yala Glacier. The mean annual air temperature in Kyangjing is about 4 °C and the annual average precipitation is about 661 mm (1988–2012). The main precipitation originates from monsoon systems during the summer months, and the rest from westerly disturbances mainly in the second part of winter and spring.

Yala Glacier has been investigated since the 1980s by Japanese researchers. The mass-balance monitoring programme was re-established in 2011 by the Cryosphere Monitoring Programme of ICIMOD and partner organizations, and has been funded by the governments of Norway and Switzerland. The observations show that the glacier has been shrinking continuously, having retreated 354 m since 1974, with an annual average retreat rate of 8 m a^{-1}. Recently, Stumm et al. (2021) performed a reanalysis study of Yala Glacier, showing that its mass balance is more negative than on other glaciers in the region, mostly because of the small and low-lying accumulation area.

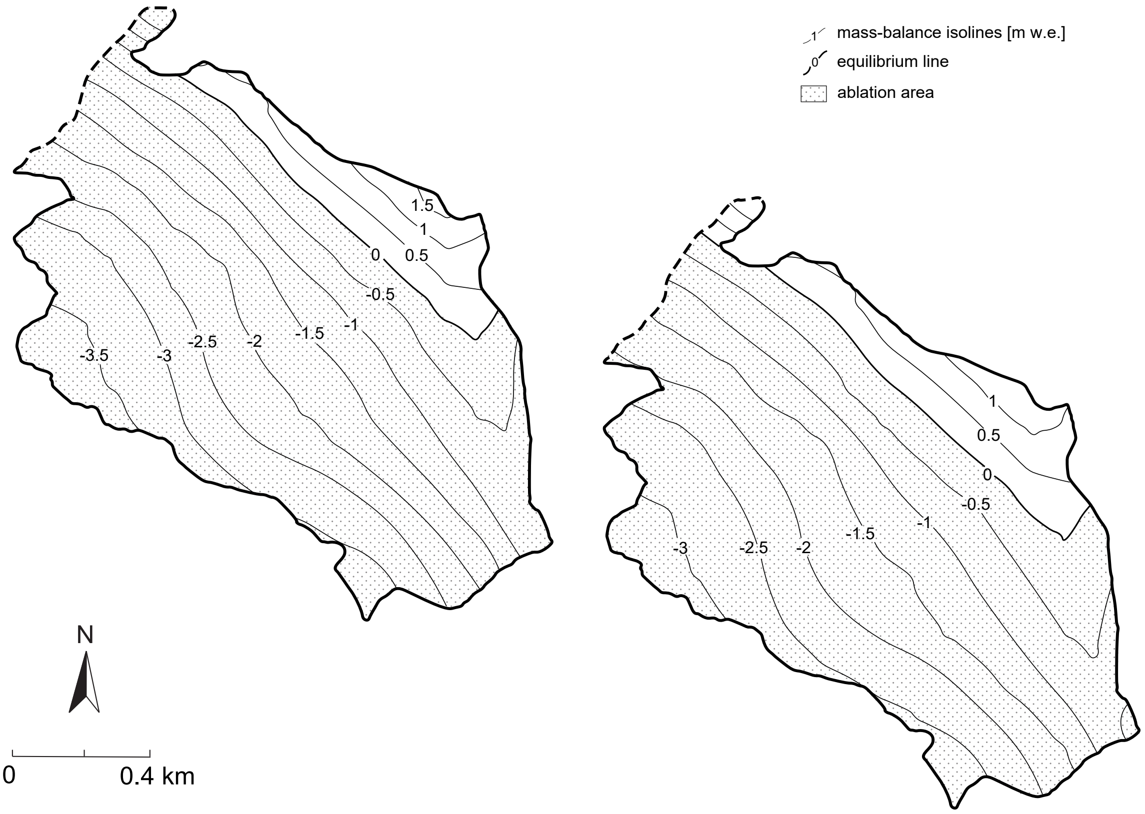
The mass balances in 2017/18 and 2018/19 showed a loss of –1,542 mm w.e. and –1,285 mm w.e., respectively, and the corresponding ELAs were 5,516 m a.s.l. and 5,509 m a.s.l., with an AAR of 12% and 13%. The glacier-wide mass balance was extrapolated based on the mass-balance gradient derived from the field measurements.

Figure 4.10.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Yala (NEPAL)

Figure 4.10.2 Mass balance versus elevation for 2017/18 and 2018/19.

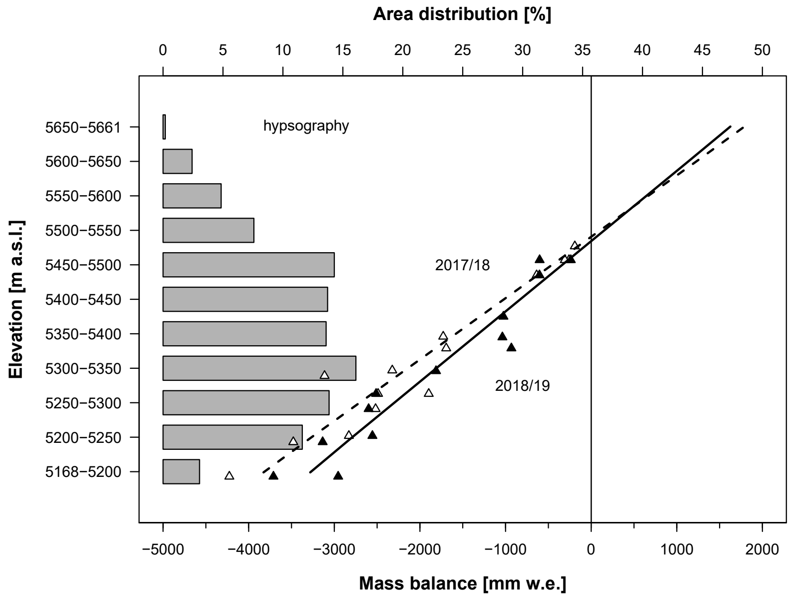


Figure 4.10.3 Glaciological balance versus geodetic balance for the whole observation period.

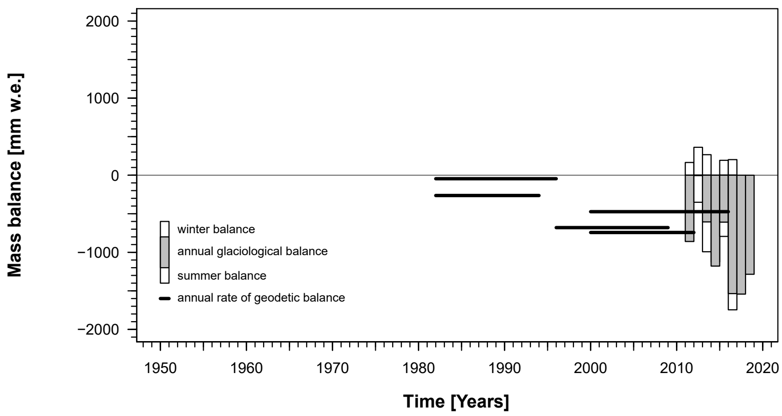
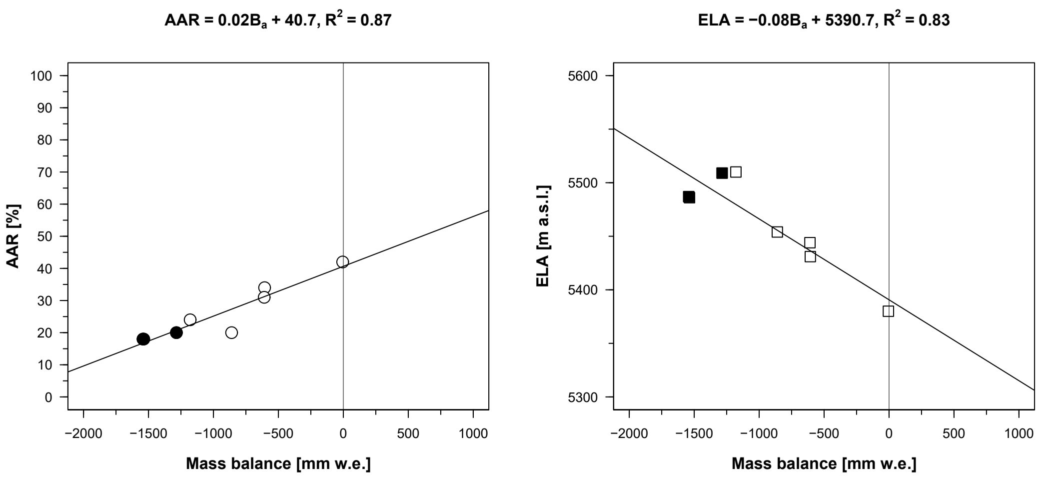


Figure 4.10.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



4.11 ROLLESTON (NEW ZEALAND/SOUTHERN ALPS)

COORDINATES: 42.89° S / 171.53° E

Rolleston Glacier in late summer 2018 (photograph taken by H. Purdie and T. Kerr).

Rolleston Glacier is a mountain glacier located in the Southern Alps/Kā Tiritiri o te Moana of New Zealand, about 110 km northwest of the city of Christchurch.

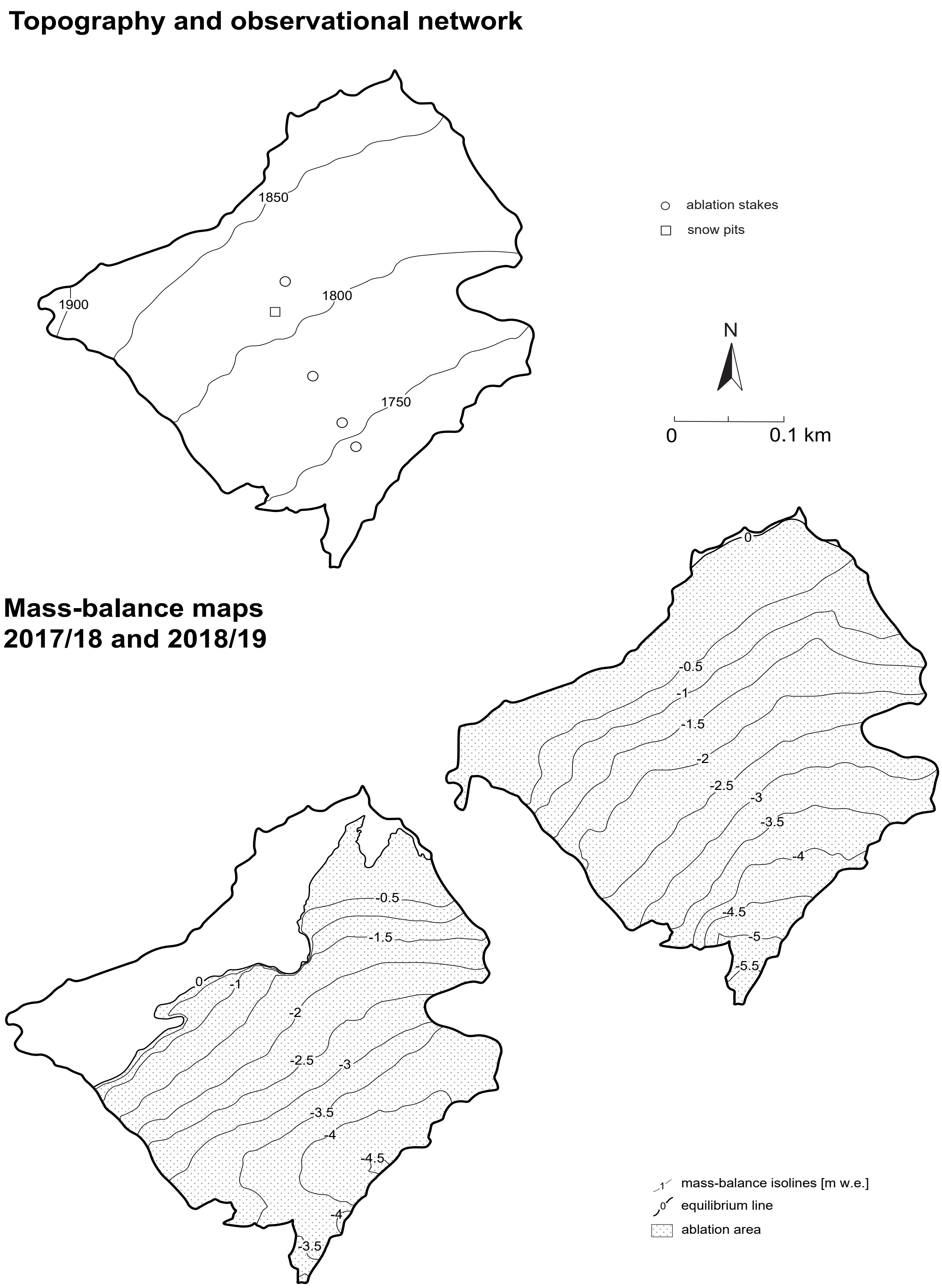
The glacier has an area of 0.1 km^2, ranges in elevation from 1,700 to 1,920 m a.s.l. and lies on the south-east aspect of Mt Philistine, (2,000 m a.s.l.), 2 km northwest of the main divide of the Southern Alps. Mean annual precipitation is ~6,000 mm which falls throughout the year. Rain and snow can fall at any time of the year, but snow dominates from May to September, the primary accumulation season. In addition to direct snowfall, the glacier's accumulation is augmented by avalanching from the surrounding steep slopes.

Mean annual temperature at the equilibrium line is estimated to be 2.2 °C. The highest temperature measured over the last 10 years at a nearby climate station (1 km to the northeast at 1,655 m a.s.l.) was 22 °C, and the lowest was –11°C. Ablation dominates in the warmer summer months (November to February).

Regular mass-balance measurements were initiated in the 2009/10 mass-balance year. Winter mass-balance measurements are carried out in late November before any of the glacier's ice surface is exposed. Summer mass-balance measurements are made in March prior to the first significant snowfall of the winter. Snow depth is probed and converted to water equivalent prior to interpolation using kriging. Ablation area melt is measured at four stakes and the ELA then interpolated based on a linear melt/elevation relationship.

The annual surface mass balances of 2017/18 and 2018/19 were both negative. 2017/18 mass balance was –1,761 mm w.e. with an ELA of 1,834 m a.s.l., however there was little snow remaining in the accumulation area and all measured snow depths were less than 250 mm. 2018/19 was the most negative mass balance observed with –1,964 mm w.e. and an ELA (1,902 m a.s.l.) near the top of the glacier.

Figure 4.11.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.



Rolleston (NEW ZEALAND)

Figure 4.11.2 Mass balance versus elevation for 2017/18 and 2018/19.

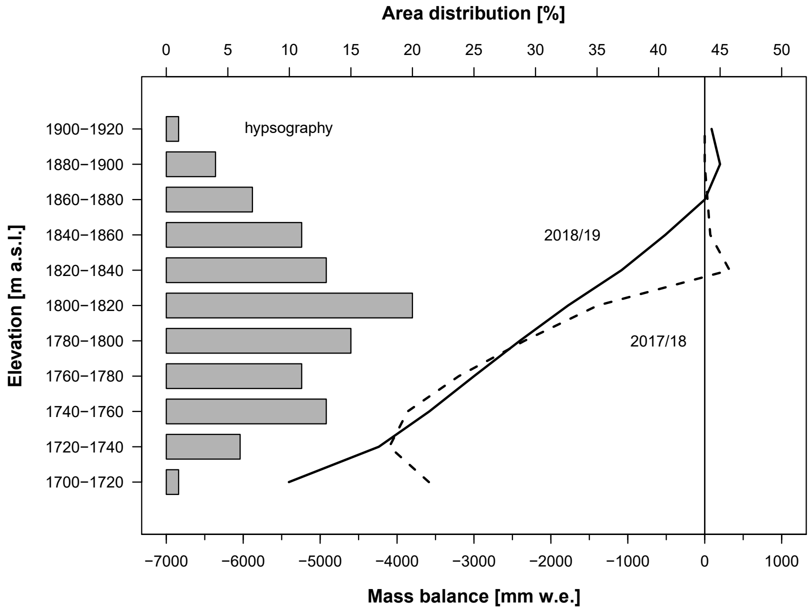


Figure 4.11.3 Glaciological balance versus geodetic balance for the whole observation period.

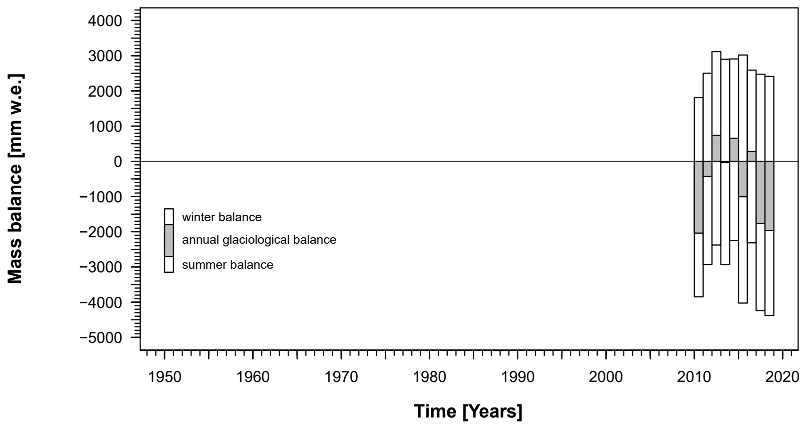
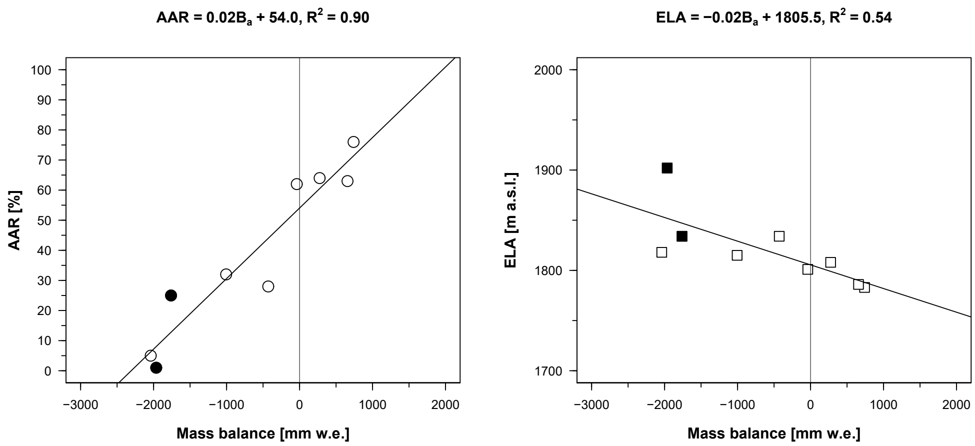


Figure 4.11.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Rolleston (NEW ZEALAND)

4.12 REMBESDALSKÅKA (NORWAY/SCANDINAVIA)

COORDINATES: 60.32° N / 7.22° E

Photograph from October 14, 2020, taken by H. Elvehøy.

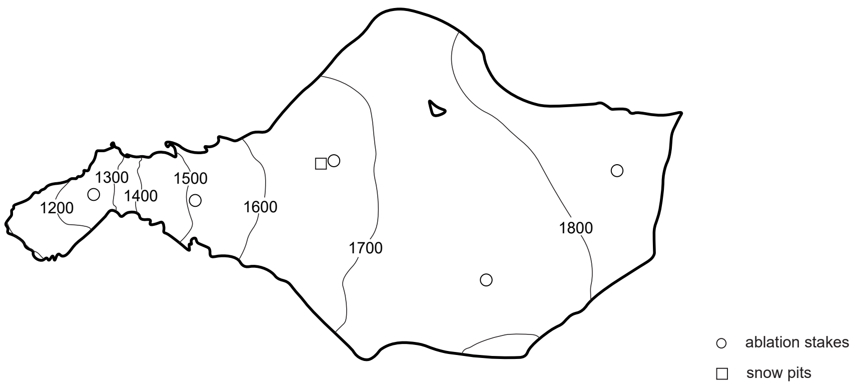
Rembesdalskåka is a 8.3 km long southwestern outlet glacier from Hardangerjøkulen, the sixth largest (73 km²) glacier in Norway. Rembesdalskåka is situated on the main water divide and drains towards Simadalen valley and Hardangerfjorden. The surface area as mapped in 2010 by air-borne LIDAR and photography is 17.23 km², extending from 1,066 m a.s.l. up to 1,854 m a.s.l. A campaign to measure ice thickness was conducted in 2010, indicating maximum ice thicknesses of up to 380 m. In the past, jökulhlaups from the glacier-dammed lake Demmevatnet flooded the down-stream valley. Diversion tunnels were constructed in 1896 and 1938 to avoid future jökulhlaups. Due to glacier recession, annual jökulhlaups have occurred since 2014, but they have been captured by a hydro-power reservoir, thus causing no damage. Length change observations were initiated in 1917. The glacier advanced about 200 m in the 1990s but has retreated about 400 m afterwards. The evolution of the surface topography is documented by digital elevation models from 1961, 1995, and 2010. The normal (1971–2000) annual air temperature and precipitation at the equilibrium line (1,700 m a.s.l.) is around –2.4 °C and 2,400 mm, respectively, as interpolated from the national reference temperature and precipitation grids.

The mass-balance measurements on Rembesdalskåka started in 1963 by the Norwegian Polar Institute. Since then, the change in cumulative mass has been −6 m w.e. The glacier had a substantial mass gain between 1988 and 1995, corresponding in time with the terminus advance. Today five centre line stakes are measured in spring and autumn to derive winter and summer point mass balances. The winter snow density is measured in one snow pit, and the winter snow depth is sounded on a 500 m grid covering the glacier area above 1,500 m a.s.l. The mass balance is calculated using the profile method. The average winter and summer balances are 2,050 mm and − 2,150 mm w.e., and the average ELA is 1,701 m a.s.l. (1963−2019). The mass-balance record has been revised, and the record for 1996−2010 was calibrated (Andreassen et al., 2016).

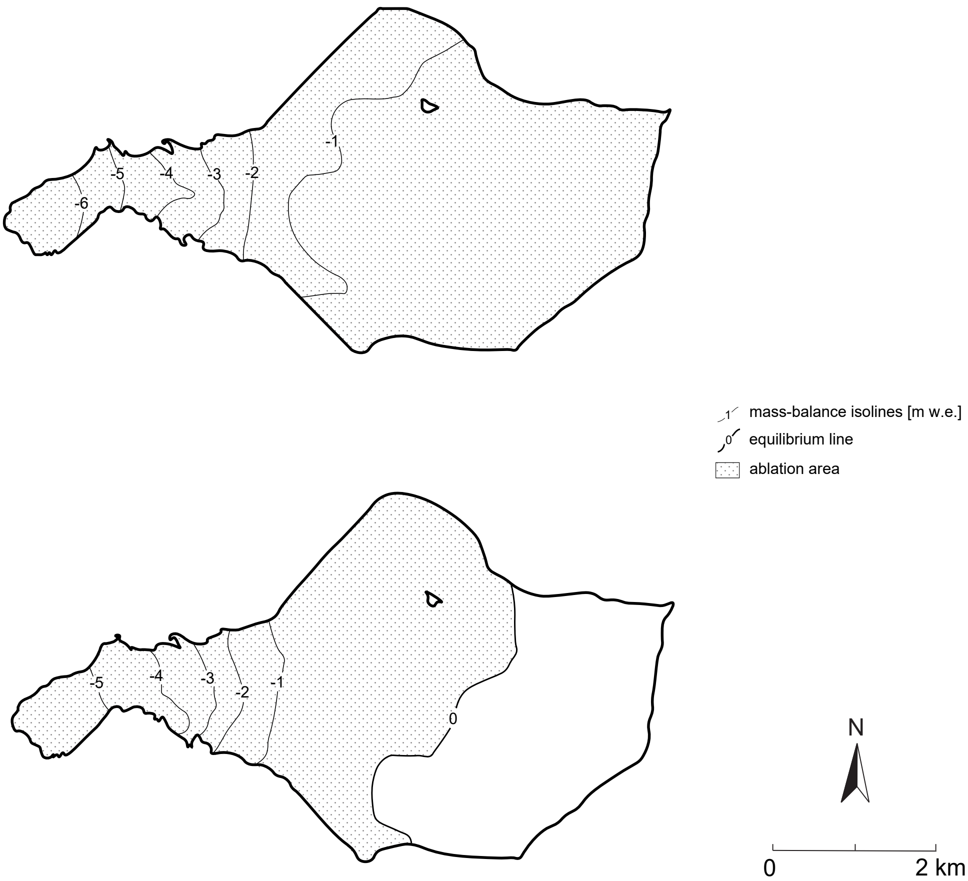
Due to intensive melt conditions in summer 2018, one of the highest summer balances on record was experienced in 2017/18. The glacier-wide annual surface mass balance was –1,279 mm w.e. with an ELA above the top of the glacier at 1,854 m a.s.l., and consequently the AAR was 0%. In 2018/19 the glacier-wide annual surface mass balance was –771 mm w.e. The ELA was at 1,755 m a.s.l. and the AAR was 40%.

Figure 4.12.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Rembesdalskåka (NORWAY)

Figure 4.12.2 Mass balance versus elevation for 2017/18 and 2018/19.

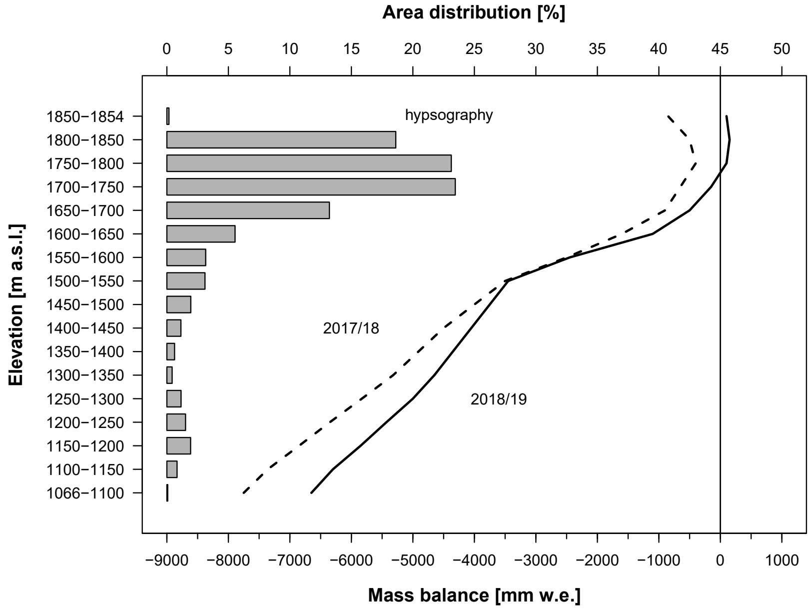


Figure 4.12.3 Glaciological balance versus geodetic balance for the whole observation period.

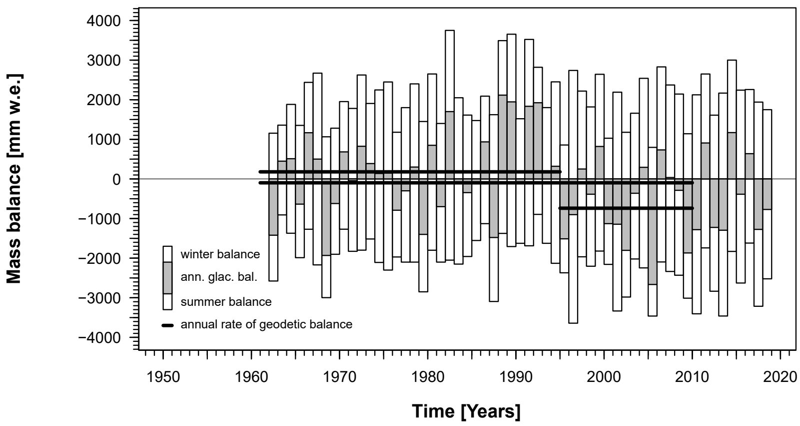
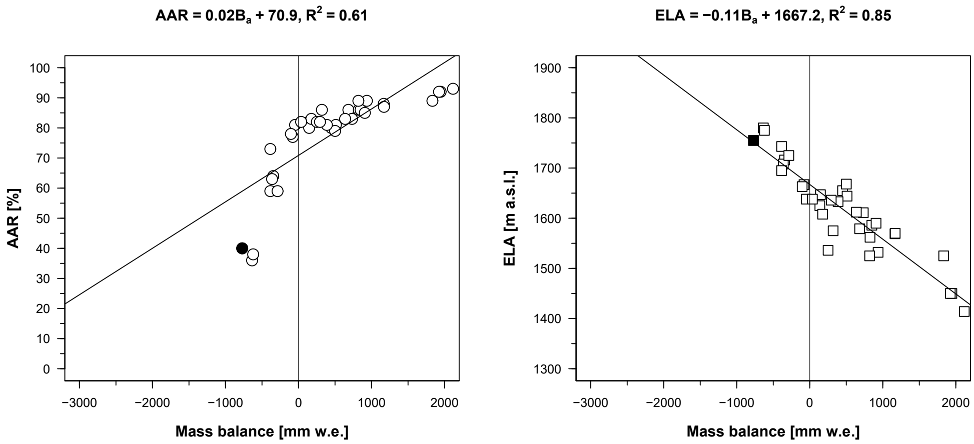


Figure 4.12.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



4.13 LEVIY AKTRU (RUSSIA/ALTAI)

COORDINATES: 50.08° N / 87.70° E

Leviy Aktru on 15 July 2019 (photograph taken by K. Nikitin).

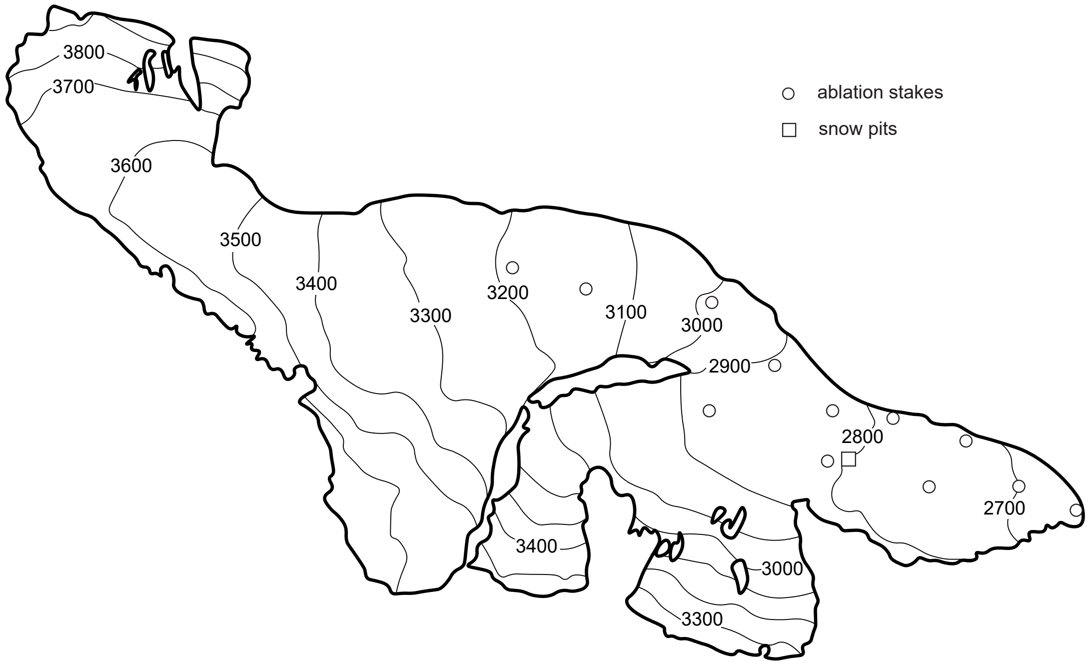
Leviy Aktru is a valley glacier located in the North Chuyskiy Range of the Russian Altai Mountains. Its surface area is 5.365 km² (2019), with a maximum elevation of 3,984 m a.s.l. and a minimum of 2,603 m a.s.l. The glacier is mainly orientated to the east. Glacier mass balance was derived using the glaciological method from 1977 to 2012 and was then interrupted. In 2019, the mass-balance observations were re-established by the Institute of Geography of the Russian Academy of Sciences and Tomsk State University. It includes over 300 points of snow-depth measurements, 13 ablation stakes, and 8 snow pits. Measurements are conducted four to five times from the beginning of May to September.

Glacier outlines and elevation was updated using the high-resolution Pléiades imagery and DEM acquired on 8 August 2019. The Pléiades DEM generated using the Ames Stereo Pipeline of Pléiades images (Shean et al., 2016). The Pléiades stereo-pair was provided by the Pléiades Glacier Observatory initiative of the French Space Agency (CNES).

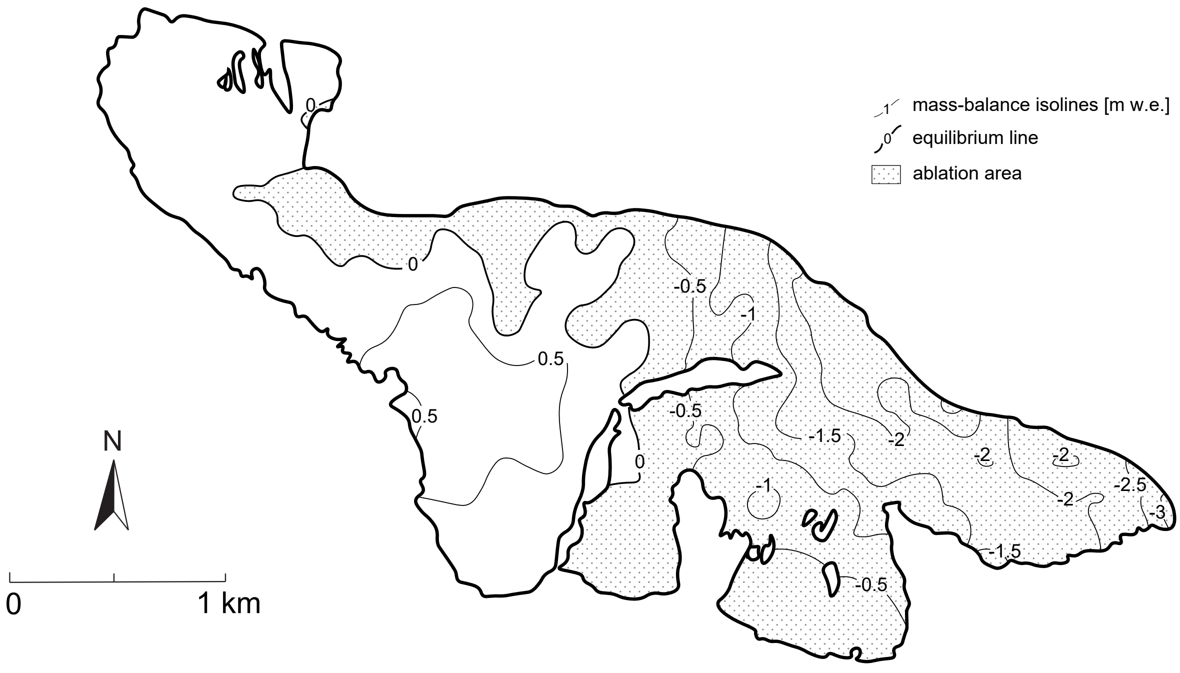
The mass balance was –425 mm w.e. in 2018/19. The corresponding ELA was at 3,250 m a.s.l. and the AAR value was 63%.

Figure 4.13.1 Topography and observation network and mass-balance map of 2018/19.

Topography and observational network



Mass-balance map 2018/19



Leviy Aktru (RUSSIA)

Figure 4.13.2 Mass balance versus elevation for 2018/19.

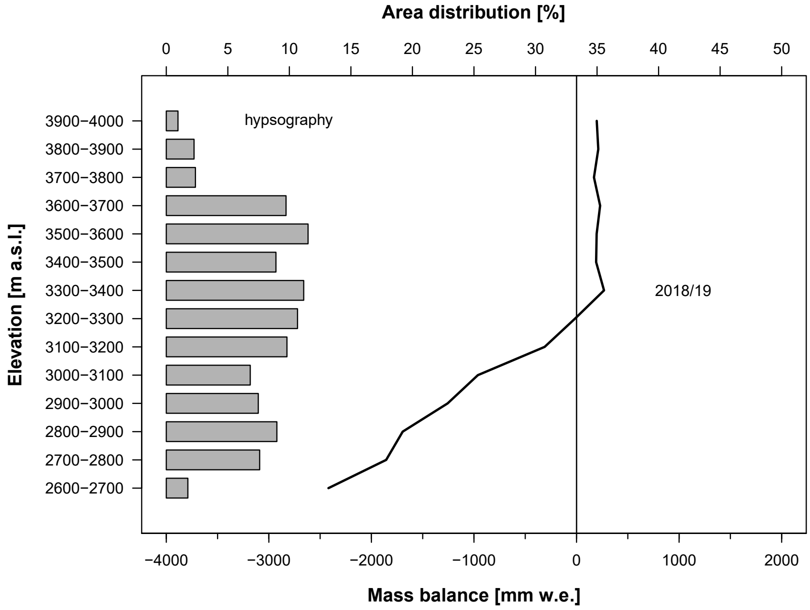


Figure 4.13.3 Glaciological balance versus geodetic balance for the whole observation period.

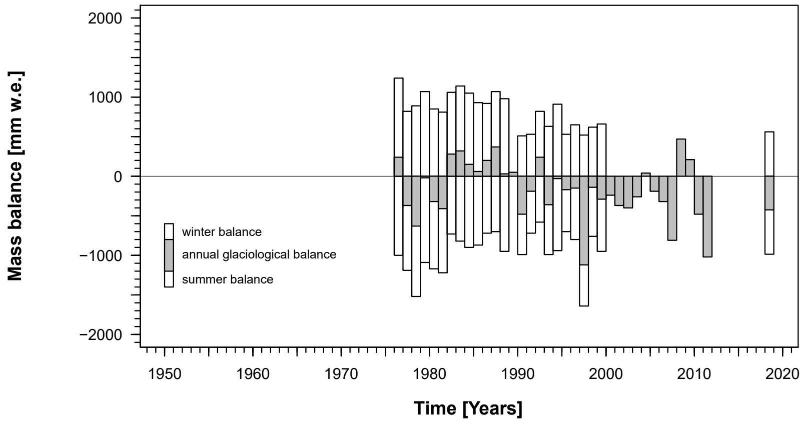
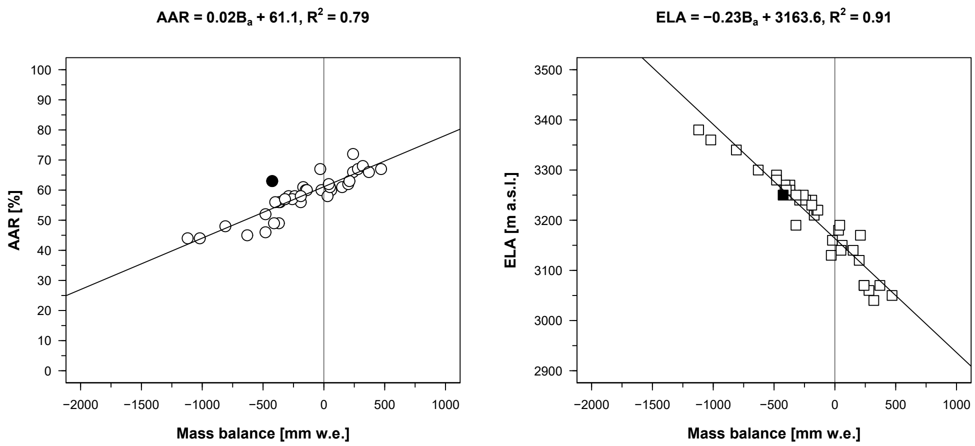


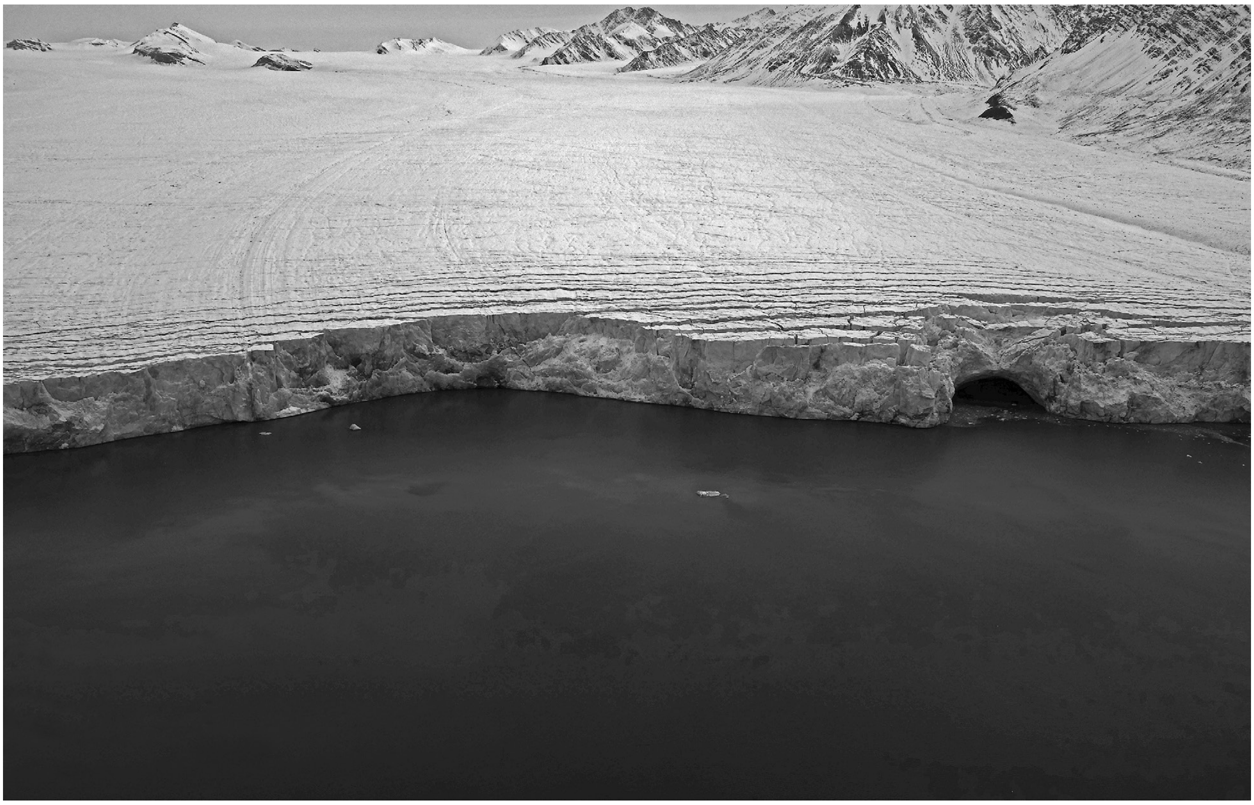
Figure 4.13.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Leviy Aktru (RUSSIA)

4.14 KONGSVEGEN (NORWAY/SPITSBERGEN)

COORDINATES: 78.80° N / 12.98° E



Photograph from Kongsvegen by J. Kohler (taken on 21 September 2020).

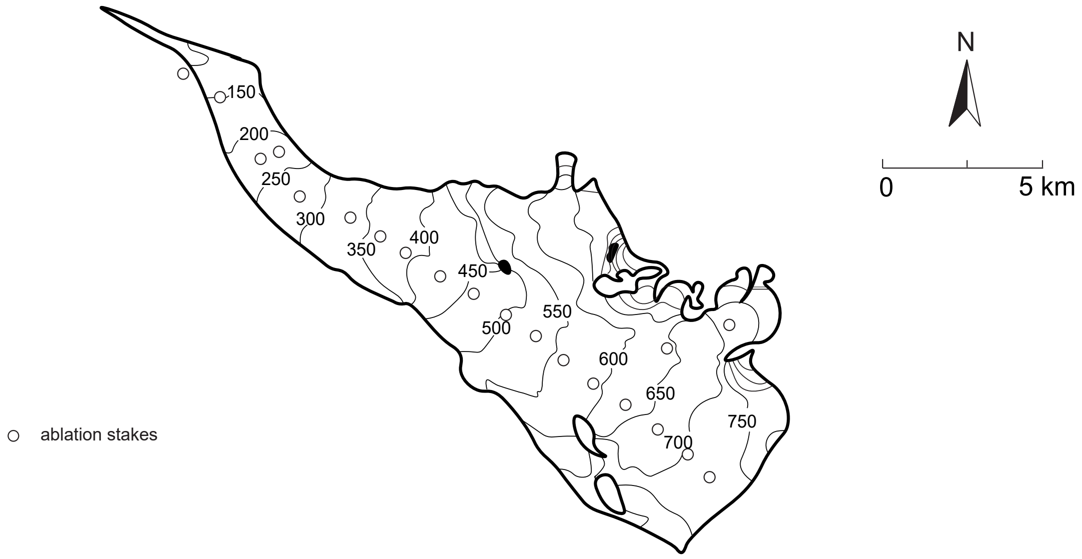
Kongsvegen is a 25 km long tidewater glacier, with an area of ~100 km^2, extending from sea level to 850 m a.s.l. Mean ice thickness is 175 m, with a maximum of 445 m. The glacier front terminates in Kongsfjord but is relatively narrow, squeezed between its fast-flowing neighbouring tidewater glacier Kronebreen and the valley side. Kongsvegen is a surge-type glacier; the last surge occurred around 1948, but recent data suggests a new surge is imminent, with speeds increasing in the upper glacier since about 2014. Speeds are still very low at the front, less than 1 m a^{-1}, so while there is nominally a calving front, there is practically no ice flux, and loss is mainly from retreat of the narrow front (ca. 200 m wide). Frontal retreat has been about 150 m a^{-1} since 2010, equivalent to an additional loss to the surface mass balance of ~20 mm w.e. a^{-1}. Mean annual air temperature, as measured at AWS at the ELA, is –8.5 °C for the period 2000–2017. Precipitation is not measured on the glacier, but the long-term average winter balance is 680 mm w.e. a^{-1}, and the mean annual precipitation at the nearest meteorological station in Ny-Ålesund is 420 mm.

Centreline stakes are measured in spring and autumn to derive winter and summer point mass balances, winter snow depth is measured on a 500 m grid covering main glacier areas, winter superimposed ice accumulation is estimated from cores taken at the lower elevation stakes, and density is measured in one to five snow pits at different locations on the centreline. The centreline point measurements are weighted by the hypsometry. A comparison with the most recent geodetic surveys (Nuth et al., 2012) from 1966, 1995, and 2007 suggests that the centreline mass-balance estimates may not be representative for the whole glacier, with centreline accumulation greater than the elevation-bin average.

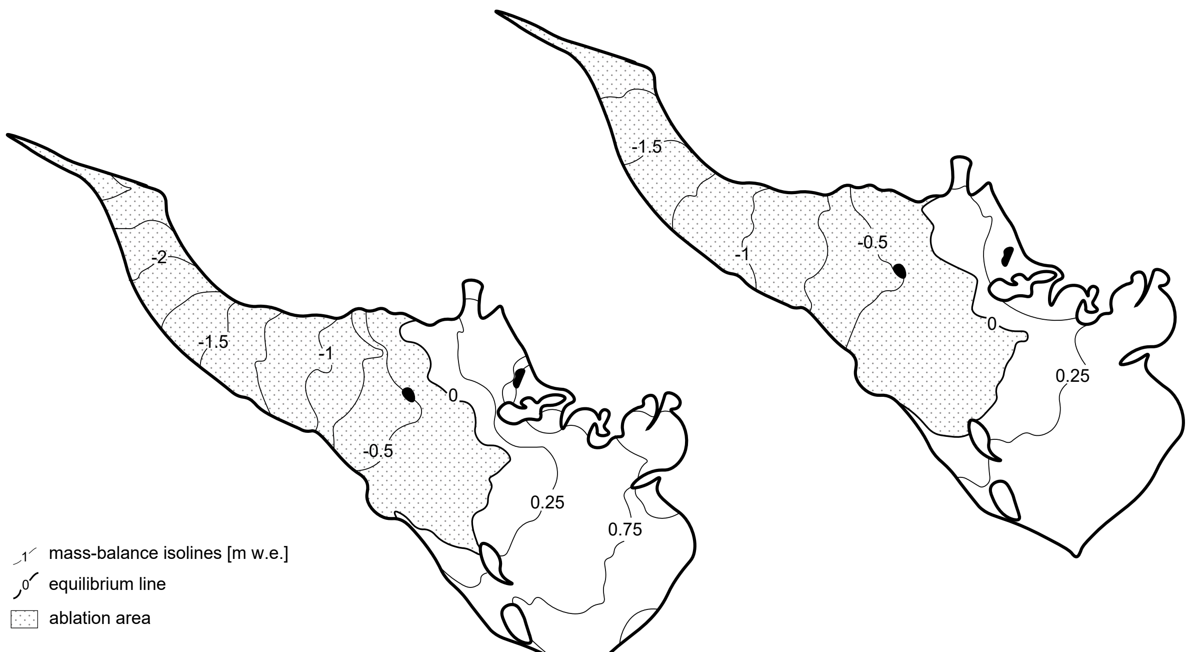
The mass balances were –210 mm and –470 mm w.e. in 2017/18 and 2018/19, respectively. Corresponding ELA (AAR) values were 574 m a.s.l. (34%) and 703 m a.s.l. (5%), respectively.

Figure 4.14.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Kongsvegen (NORWAY)

Figure 4.14.2 Mass balance versus elevation for 2017/18 and 2018/19.

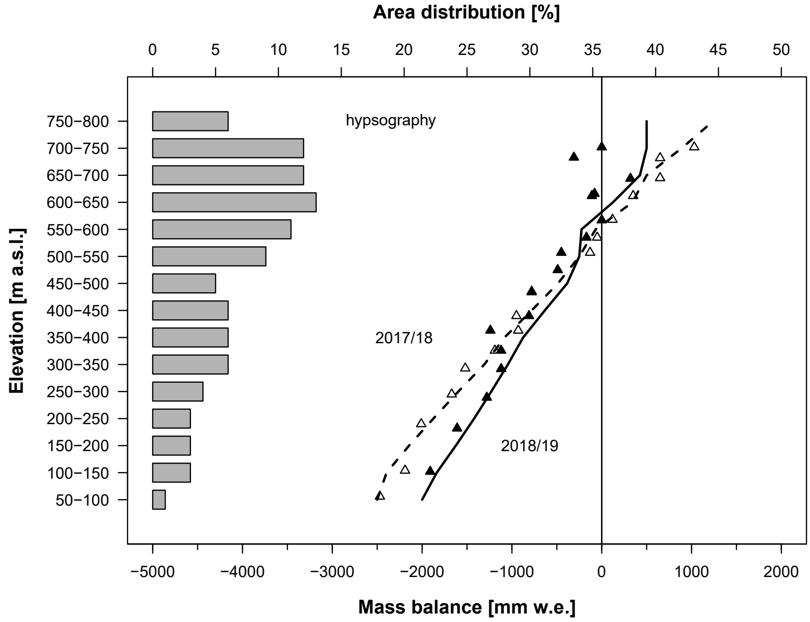


Figure 4.14.3 Glaciological balance versus geodetic balance for the whole observation period.

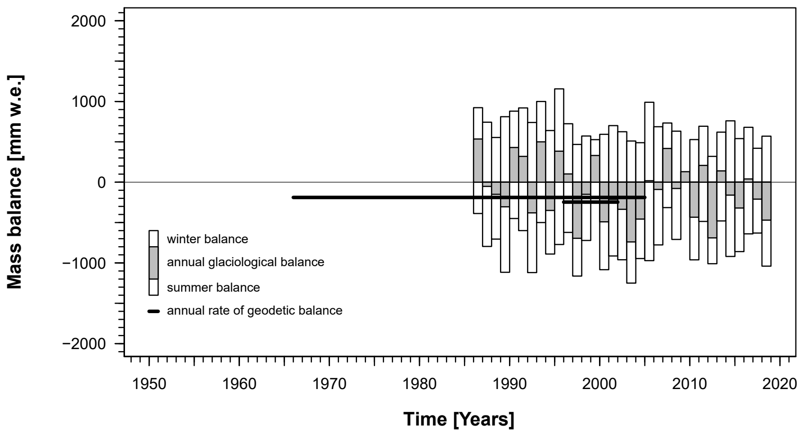
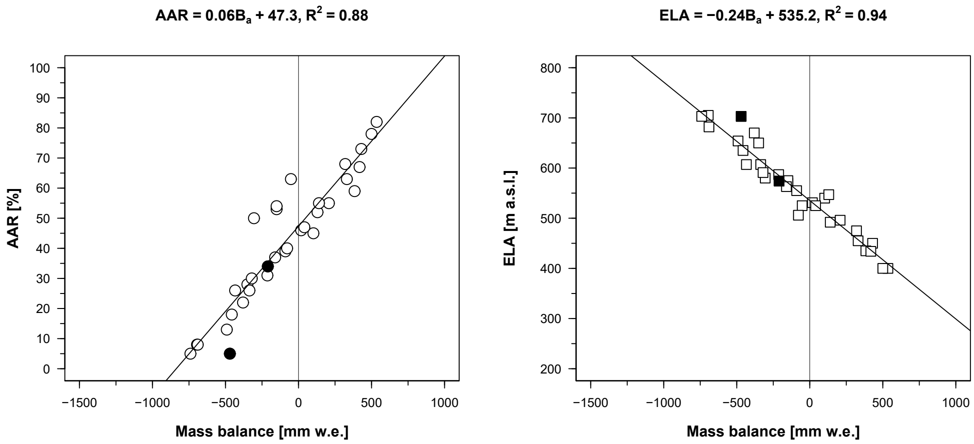


Figure 4.14.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Kongsvegen (NORWAY)

4.15 WALDEMARBREEN (NORWAY/SPITSBERGEN)

COORDINATES: 78.67° N / 12.00° E

Photograph from summer 2019, taken by I. Sobota.

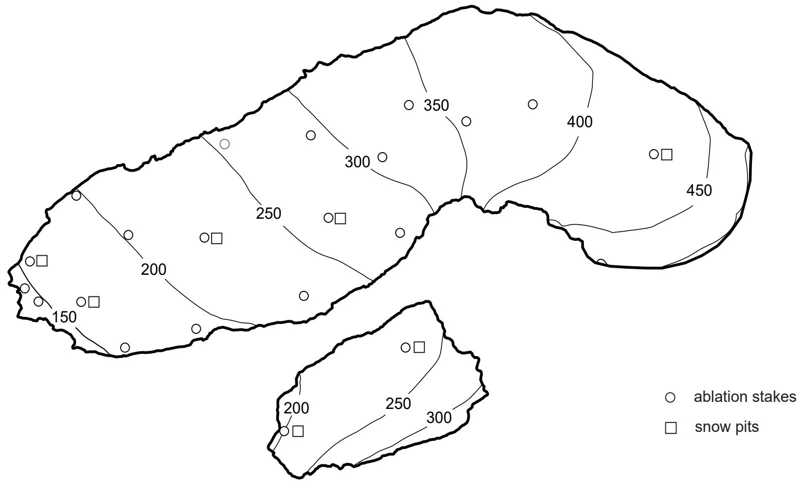
Waldemarbreen is located in the northern part of the Oscar II Land, north-western Spitsbergen, and flows down valley to the Kaffiøyra plain. Kaffiøyra is a coastal lowland situated on the Forlandsundet. The glacier is composed of two parts separated by a 1,600 m long medial moraine. It occupies an area of about 2.1 km^2 and extends from 500 m to 150 m a.s.l. with a general exposure to the west. Mean annual air temperature in this area is about –4 to –5 °C and annual precipitation is generally 300–400 mm. In the years 1997 to 2019 the average air temperature during the summer season in this region was 5.4 °C. Since the 19th century, the surface area of the Kaffiøyra region glaciers has decreased by more than 48%. Recently Waldemarbreen has been retreating.

Mass-balance investigations have been conducted since 1996. Detailed glaciological research methods and geodetic surveys are described by Sobota et al. (2016) and Sobota (2013, 2017, 2021).

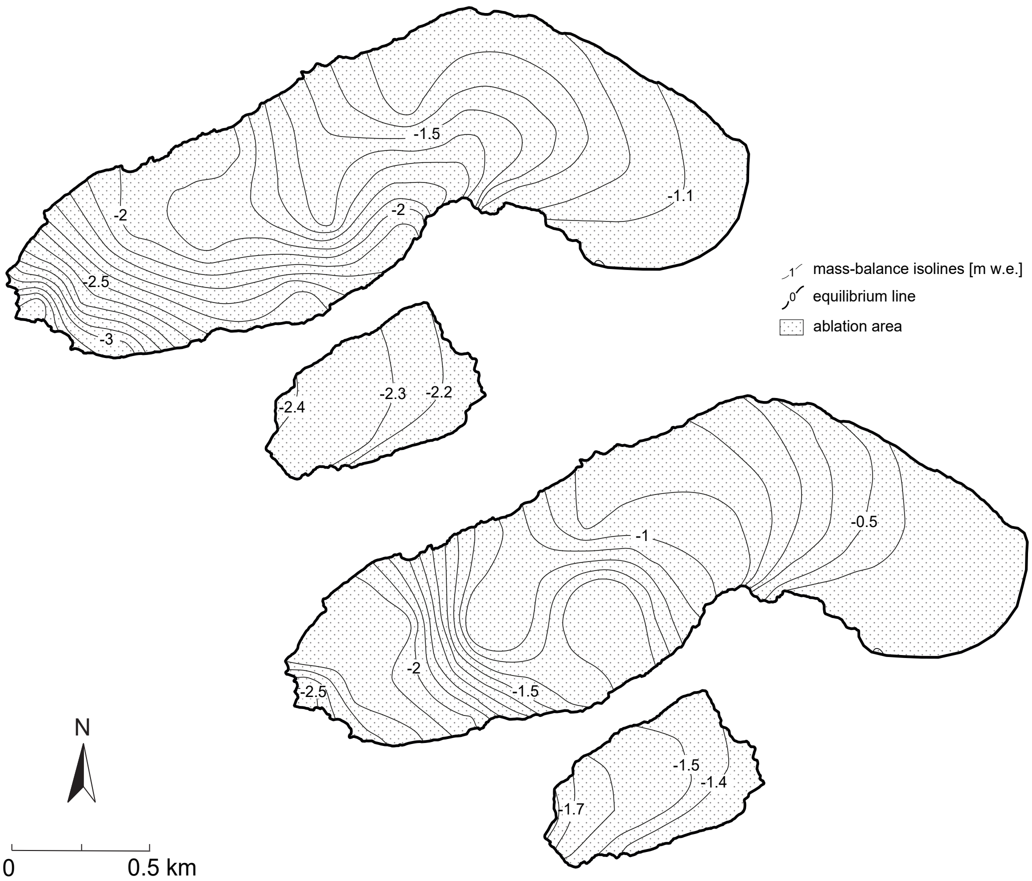
The balance in 2017/18 showed a mass loss of –1,743 mm w.e. The corresponding ELA was at 579 m a.s.l., with an AAR of 0%. In 2018/19 the mass balance was –1,061 mm w.e. The ELA was at 489 m a.s.l., with an AAR of 0%. The mean value of the mass balance for the period 1996–2019 was –849 mm w.e.

Figure 4.15.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Waldemarbreen (NORWAY)

Figure 4.15.2 Mass balance versus elevation for 2017/18 and 2018/19.

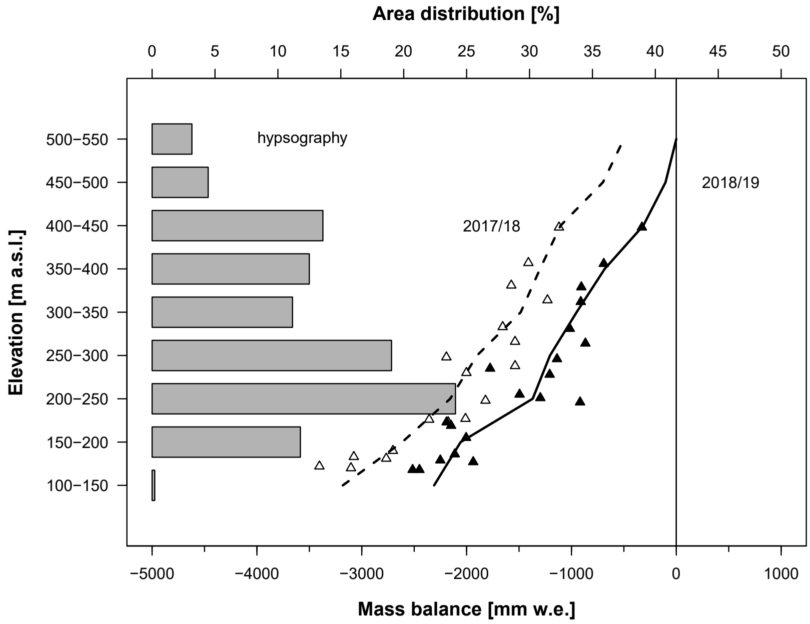


Figure 4.15.3 Glaciological balance versus geodetic balance for the whole observation period.

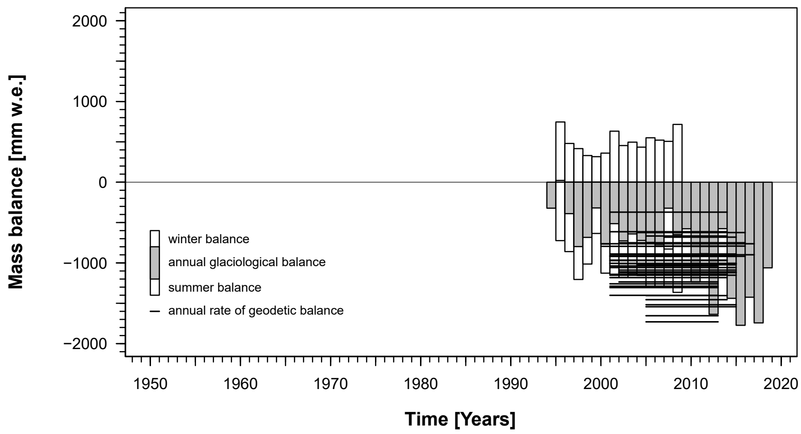
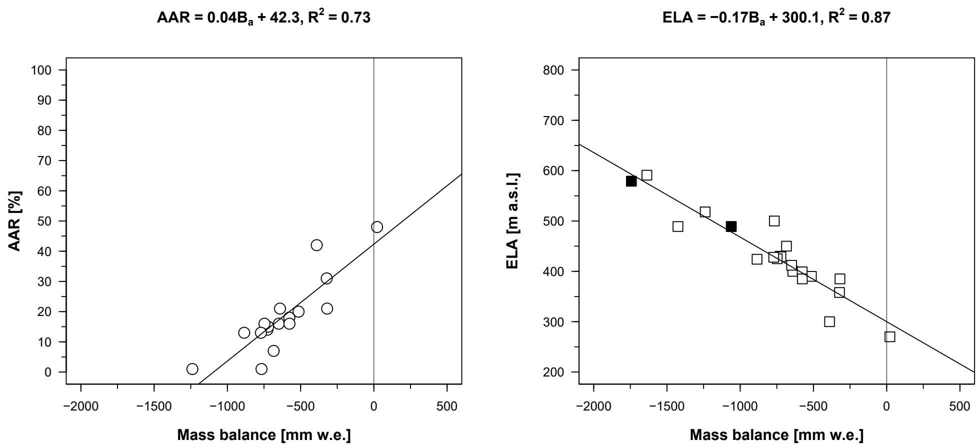


Figure 4.15.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Waldemarbreen (NORWAY)

4.16 STORGLACIÄREN (SWEDEN/SCANDINAVIA)

COORDINATES: 67.90° N / 18.57° E

Storglaciären in the summer of 2016 (photograph taken by P. Holmlund).

Storglaciären is a small polythermal valley glacier located in the alpine Kebnekaise mountains, Arctic Sweden. The glacier stretches about 3 km from West (~1,720 m a.s.l.) towards East (~1,150 m a.s.l.) and has an area of 2.9 km^2. The glacier is made up of a large, primarily flat (2° to 15°) ablation area and a small primarily steep (2° to 80°) accumulation area. The average thickness is estimated to be near 100 m with a maximum thickness of over 200 m at overdeepenings. The regional climate is continental with a prevailing westerly wind. Temperature usually peaks in July and is at its lowest in January. Climate records from Tarfala Research Station (1,130 m a.s.l.), situated about one kilometre from the glacier, exists from 1965. Additional melt season weather observations from the glacier (1,350 m a.s.l.) exists from 2013. At the location of the glacial automatic weather station, the mean annual temperature is approximately −3.3 °C and the annual precipitation is around 1,500 mm where two thirds of the precipitation fall as snow. The latest high-resolution geodetic data is from 2015 and was done by the Swedish national land survey agency Lantmäteriet.

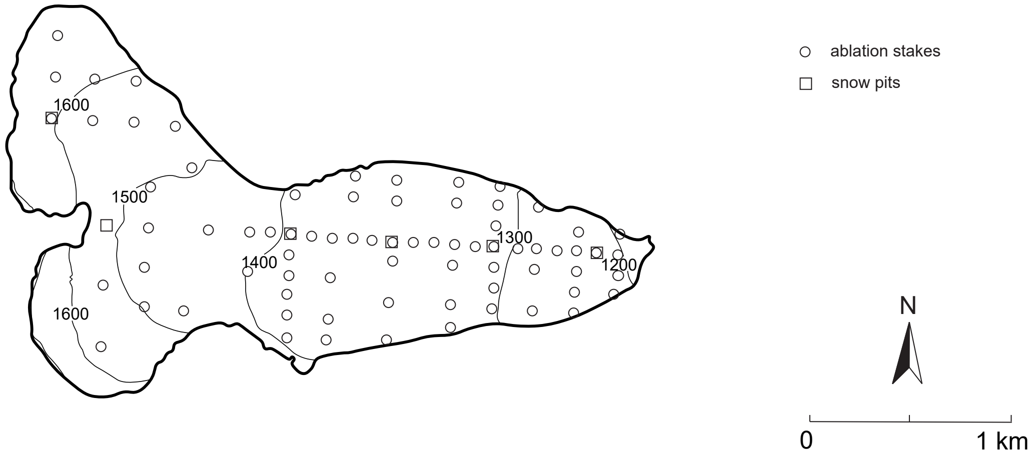
Since the start of the surface mass-balance measurements of Storglaciären in year 1945/46, the cumulative mass change has been −22 m w.e. Today, the mass balance is measured with an extensive network of almost 300 snow-depth probe points, 73 ablation stakes and 6 density pits and is calculated using universal kriging with a Gaussian model.

The mass-balance year 2017/18 was a negative year with an annual mass balance of −1,600 mm w.e., (winter balance, 1,090 mm w.e.; summer balance, −2,690 mm w.e.). The ablation season had 143 positive degree days (652 °C). The July air temperature in the Tarfala valley was the highest monthly air temperature on record.

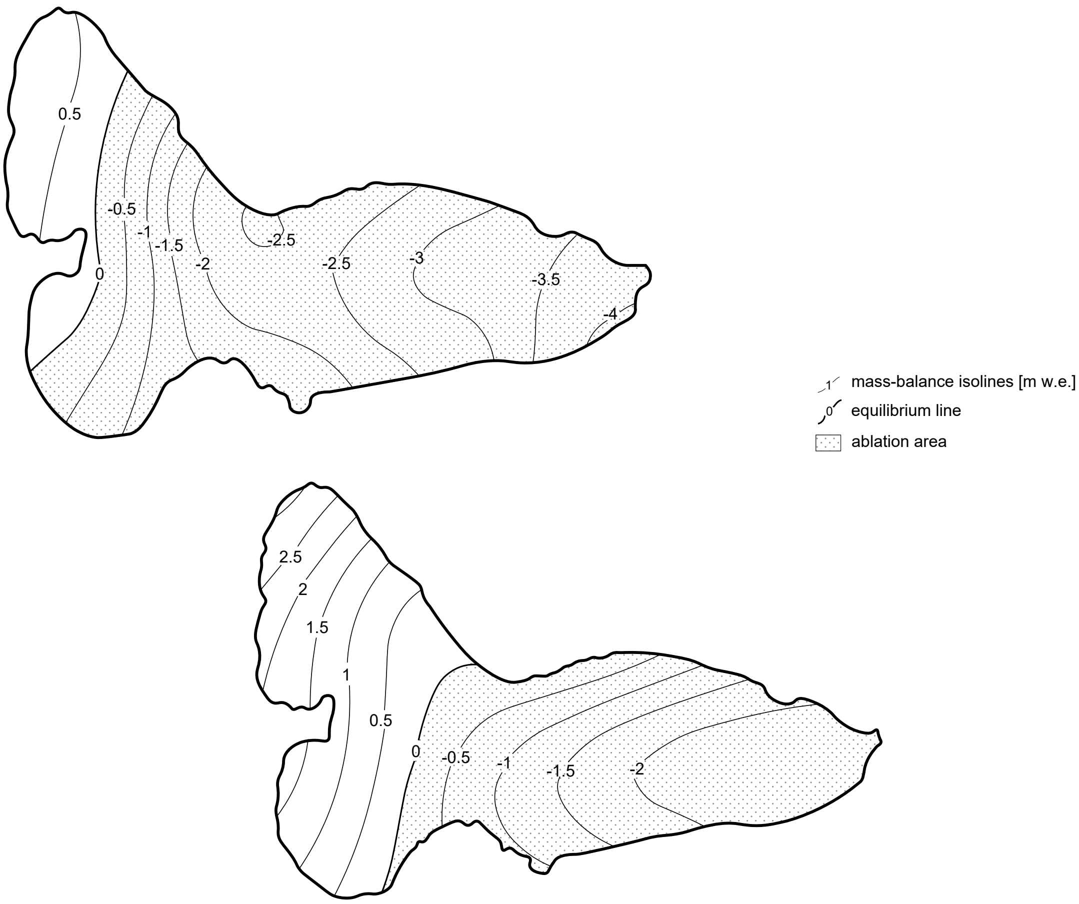
The mass-balance year 2018/19 was a negative year with a net surface mass balance of −310 mm w.e. (winter balance, 1,590 mm w.e.; summer balance, −1,900 mm w.e.). The ablation season had 124 positive degree days (622 °C).

Figure 4.16.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Storglaciären (SWEDEN)

Figure 4.16.2 Mass balance versus elevation for 2017/18 and 2018/19.

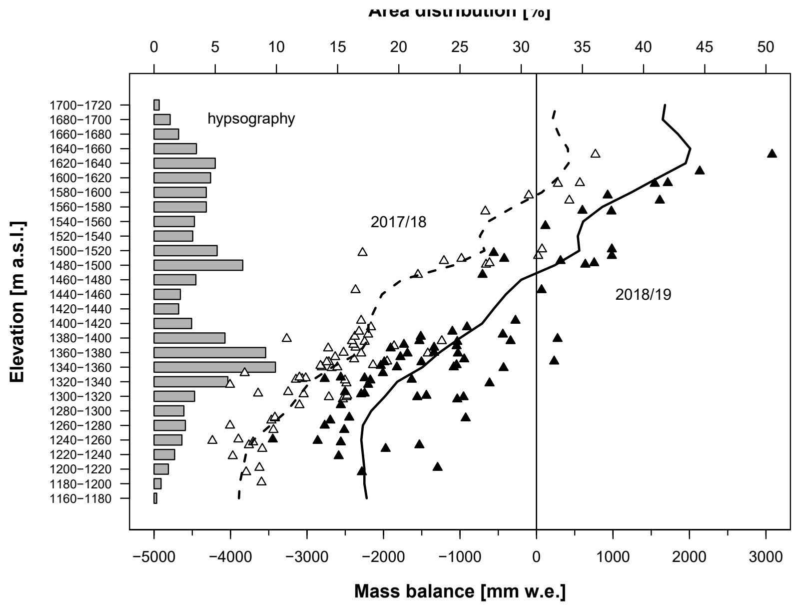


Figure 4.16.3 Glaciological balance versus geodetic balance for the whole observation period.

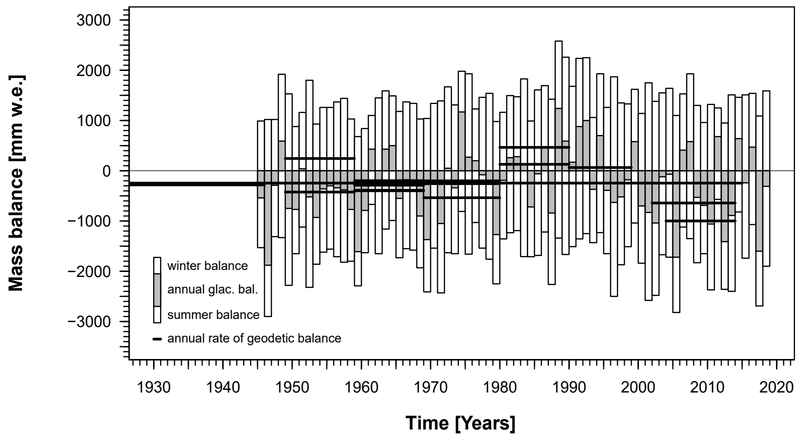
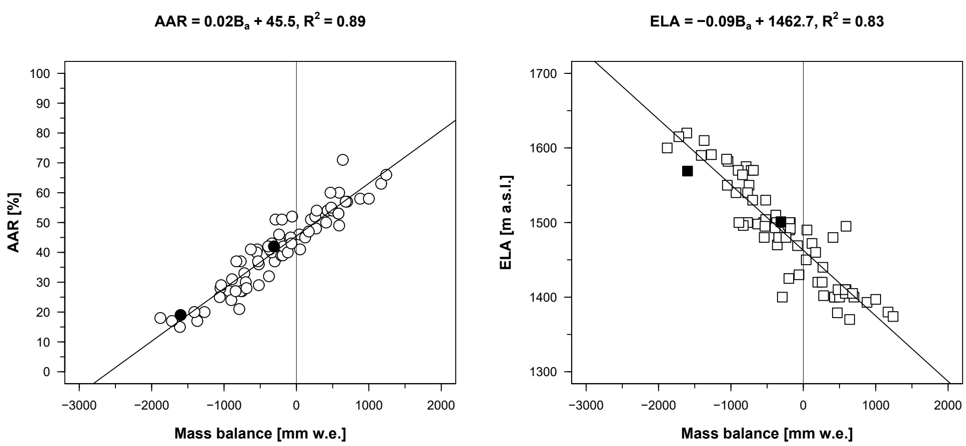


Figure 4.16.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Storglaciären (SWEDEN)

4.17 GRIES (SWITZERLAND/ALPS)

COORDINATES: 46.44° N / 8.33° E

Griesgletscher and its proglacial area in September 2020 (M. Huss).

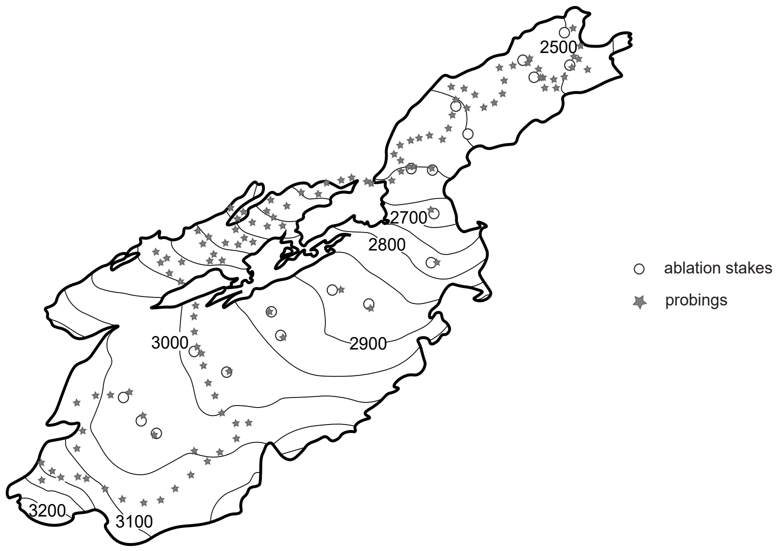
Griesgletscher is a temperate valley glacier located in the central Swiss Alps at the border to Italy. The glacier covers an area of 4.6 km^2 (2017) with a north-eastern exposure and spans an elevation range from 3,330 to 2,430 m a.s.l. Griesgletscher currently has a length of 5.3 km and different ice thickness measurement campaigns indicate a present ice volume of 0.24 km^3 corresponding to a mean ice thickness of 52 m (Grab et al., 2021). The average annual and summer air temperature (1981–2010) at the equilibrium line is around –3 °C and +4 °C, respectively, and mean annual precipitation at the valley station Ulrichen (7 km from the glacier terminus) is 1,370 mm.

Detailed mass-balance measurements were started in 1961 in connection with the construction of a reservoir for hydro-power production. Between 1970 and 1984 measurements at up to 80 stakes were performed. Subsequently, the network was reduced to about 20 stakes. Since 1993, also winter mass balance has been determined continuously, resolving the seasonal components of glacier mass change. The evolution of surface topography is documented by more than a dozen digital elevation models at decadal intervals and volumetric changes have been determined over the period 1884 to 2019 (Bauder et al., 2007). This data indicates that over the last 130 years, Griesgletscher has lost three quarters of its ice volume. The wastage of Griesgletscher is particularly rapid in comparison to neighbouring glaciers with annual thickness losses often being substantially higher.

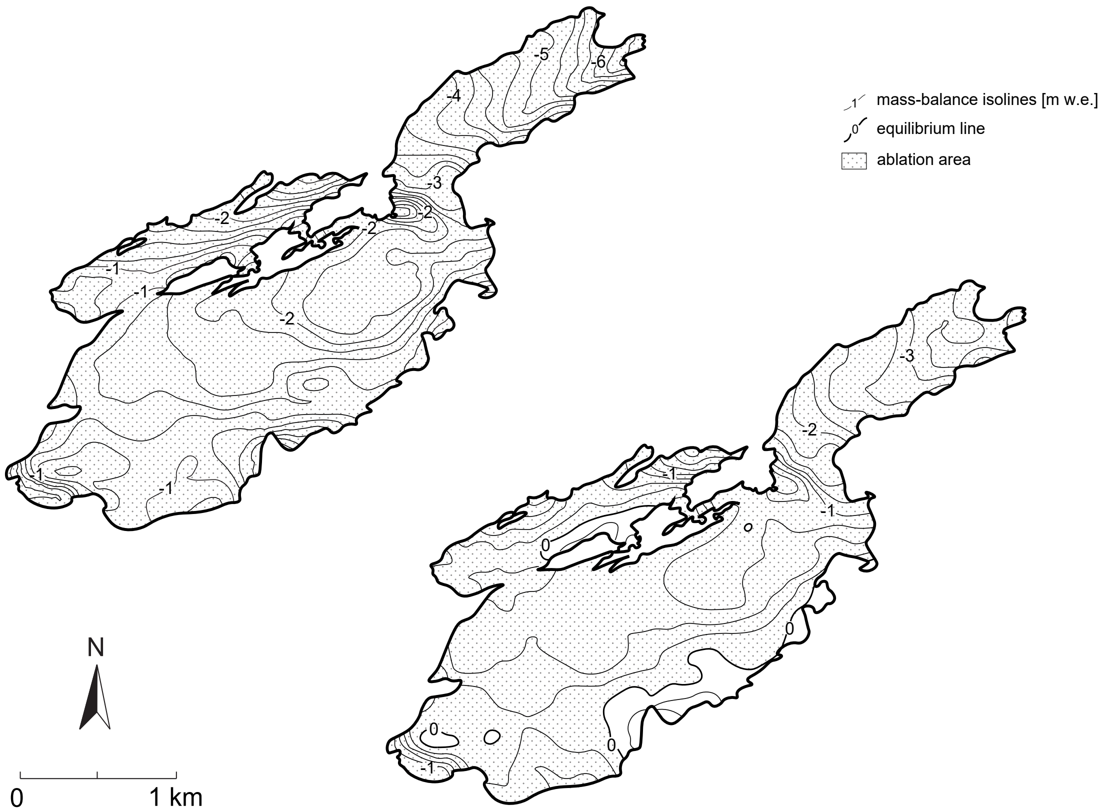
Despite high winter precipitation, the glacier-wide annual surface mass balance 2017/2018 was strongly negative with –2,045 mm w.e. The ELA was above the highest peaks and AAR was 0%. A more moderate loss, attributed to above-average winter snow, occurred in 2018/2019 with a glacier-wide mass balance of –865 mm w.e. a^{-1}. The ELA was on 3,095 m a.s.l. and AAR was 7%.

Figure 4.17.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Gries (SWITZERLAND)

Figure 4.17.2 Mass balance versus elevation for 2017/18 and 2018/19.

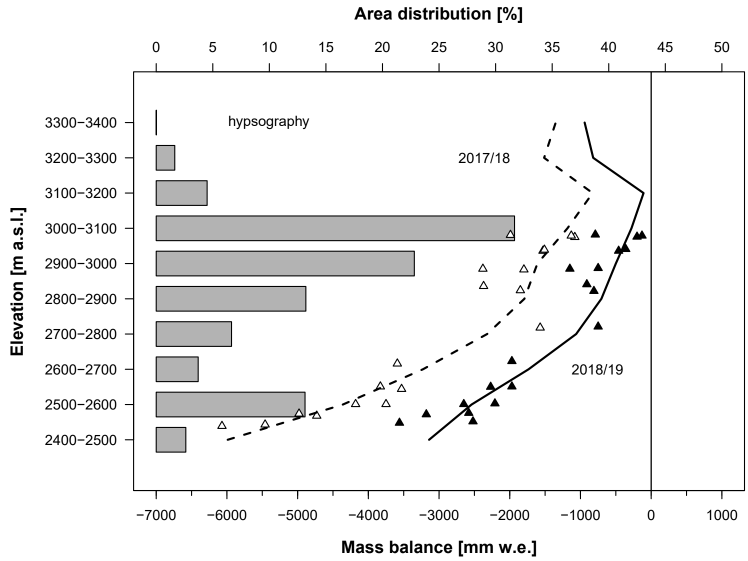


Figure 4.17.3 Glaciological balance versus geodetic balance for the whole observation period.

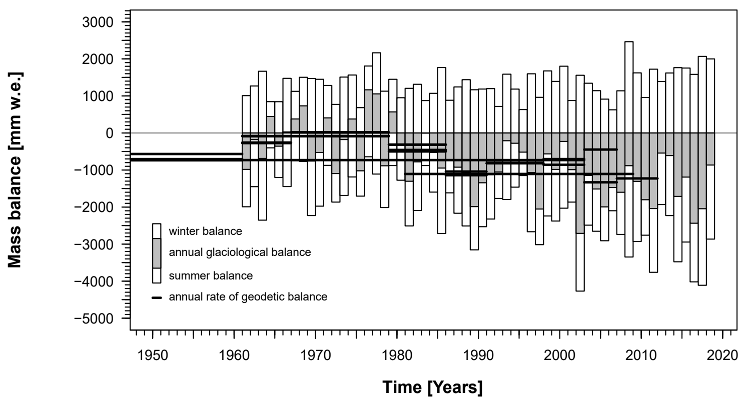
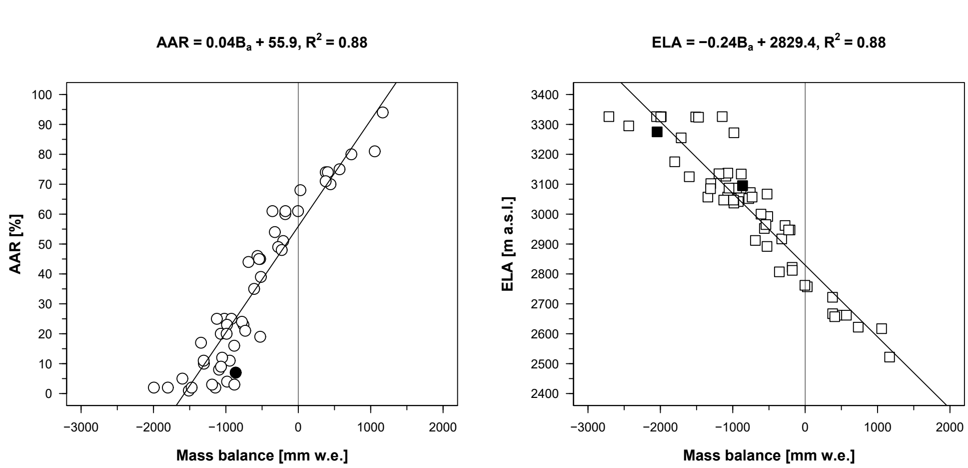


Figure 4.17.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Gries (SWITZERLAND)

4.18 EASTON (USA/COAST MOUNTAINS)

COORDINATES: 48.76° N / 121.82° W

Easton Glacier in 2018 (photograph taken by M. Pelto).

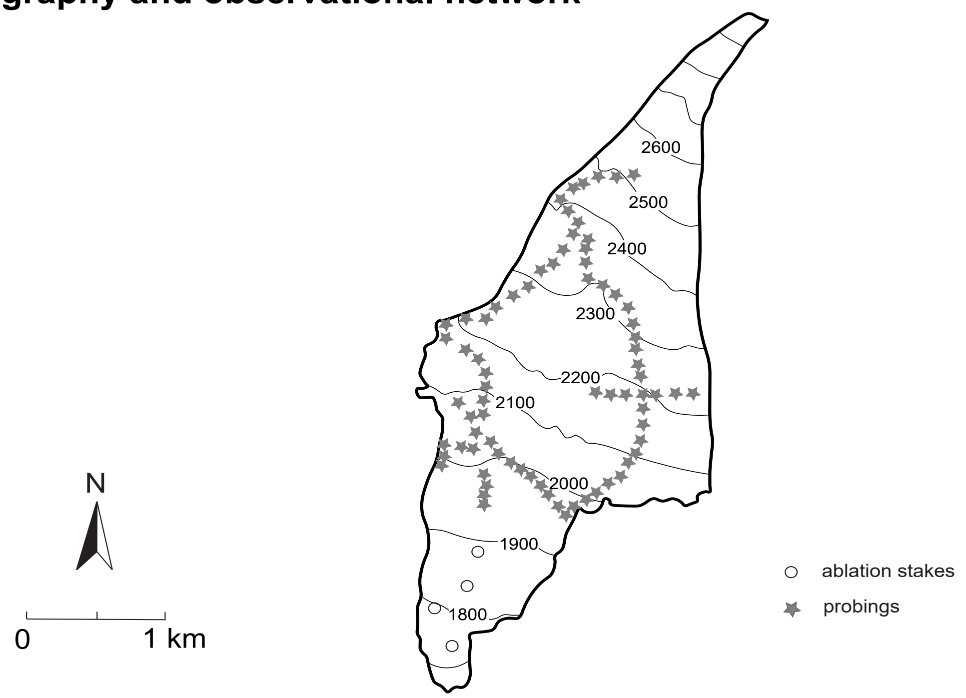
Easton Glacier flows down the south slope of Mount Baker, North Cascade Range, Washington. The glacier terminates in a valley confined by ~50 m high Little Ice Age lateral moraines. Easton Glacier extends from just below Sherman Crater at 2,950 m a.s.l. to the terminus at 1,700 m a.s.l. Each summer since 1990 the North Cascade Glacier Climate Project (NCGCP) has measured the mass balance of this glacier, using an extensive network of accumulation measurements (100+) and several ablation measurement sites. The accumulation measurements are completed late in the summer using probing and crevasse stratigraphy. Snowpack typically increases from the terminus to 2,500 m a.s.l. and then remains comparatively constant. The glacier usually remains entirely snow-covered until late July. In 1907 the glacier ended at 1,250 m a.s.l., by 1950 the glacier had retreated 2,100 m and terminated at 1,625 m a.s.l. The glacier started advancing after 1954 the last of the large Mount Baker glaciers to advance, advancing several hundred meters down to 1,580 m a.s.l. by 1979. The Easton Glacier has a lower slope than the other largest glaciers on Mount Baker leading to a slower response to climate change. The glacier was in contact with the moraine emplaced by this advance until 1990 and was the last of the large Mount Baker glaciers to begin to retreat. By 2019 the glacier had retreated 405 m terminating at 1,650 m a.s.l. and from 1990 to 2019 had a mean annual balance of −0.65 m a^{-1}, a cumulative loss of −19.3 m. Given a thickness in 1990 between 60 and 75 m, this is about 30% of the total glacier volume. The lowest 350 m of the glacier has limited crevassing and movement indicating retreat will continue.

The 2018 winter season featured relatively normal snowpack despite a winter of wide temperature fluctuations, February freezing levels 400 m below the mean and December 500 m above the mean. Summer melt conditions featured temperatures 1.1 °C above the 1984−2019 mean. There was a step change in snowpack near 2,300 m a.s.l. The summer melt season through August was warm and exceptionally dry, which has also helped foster forest fires. The melt rate during the August field season was ~30% above normal. The ELA was 2,125 m and the AAR 49% leading to a negative annual balance of −500 mm w.e.

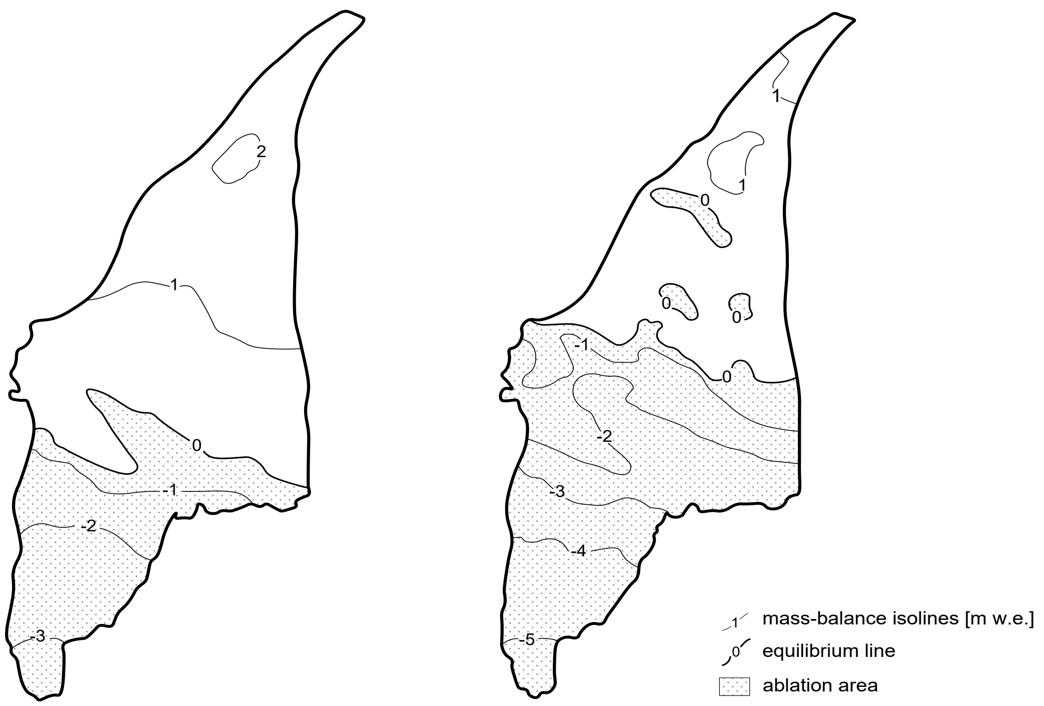
The 2019 accumulation on April 1 retained snow water equivalent in snowpack across the range was ~70% of average. Freezing levels ranged from well above normal in January at 1,530 m, to the lowest level, 370 m of any February since freezing level records began in 1948. The ablation season was 0.5 °C above the 1984−2019 mean, which combined with the low snowpack and early exposure of glacier ice with a higher melt rate than snow, led to significantly above average summer ablation. The ELA was at 2,300 m a.s.l. and the AAR was 38%, indicative of a significant negative balance of −1,700 mm w.e.

Figure 4.18.1 Topography and observation network and mass-balance maps of 2017/18 and 2018/19.

Topography and observational network



Mass-balance maps 2017/18 and 2018/19



Easton (USA)

Figure 4.18.2 Mass balance versus elevation for 2017/18 and 2018/19.

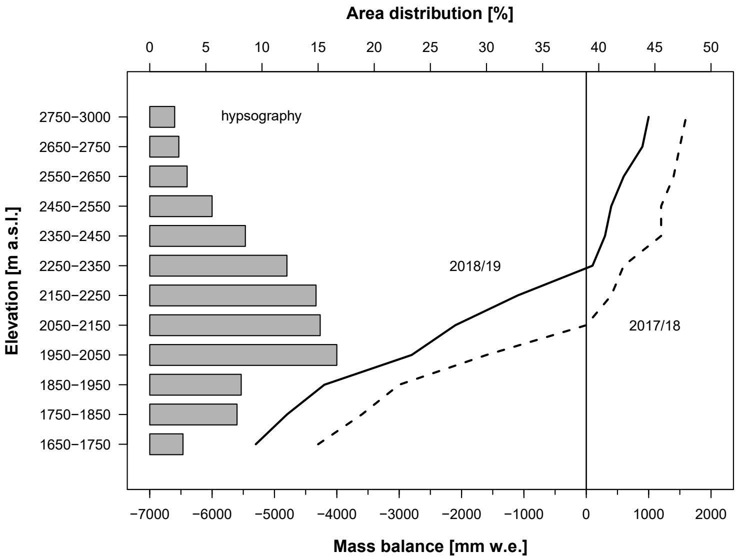


Figure 4.18.3 Glaciological balance versus geodetic balance for the whole observation period.

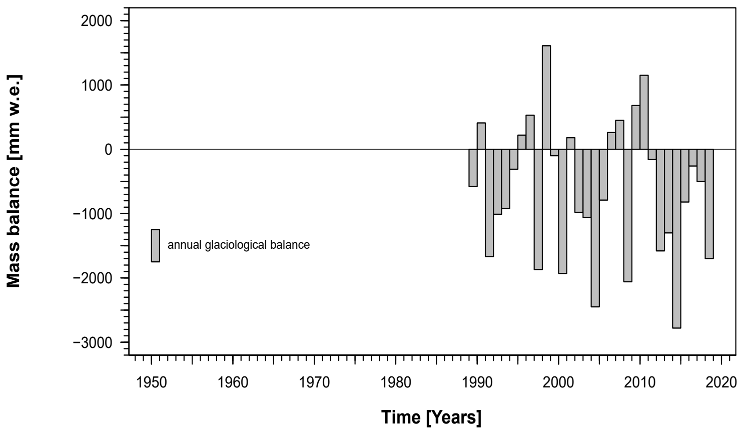
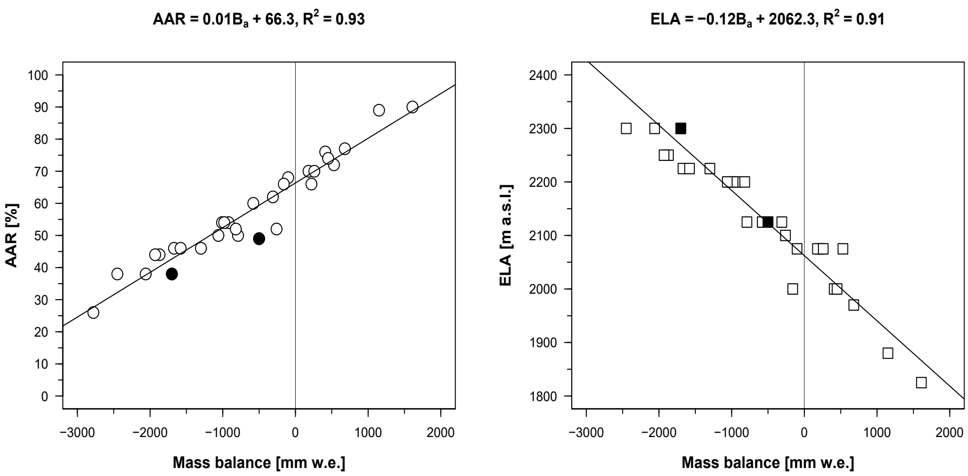


Figure 4.18.4 Accumulation area ratio (AAR) and equilibrium line altitude (ELA) versus specific mass balance for the whole observation period.



Easton (USA)

5 CONCLUDING REMARKS

Glacier monitoring has been coordinated internationally since 1894. This long-term effort has resulted in the compilation of an unprecedented dataset of changes in glacier length, area, volume, and mass. The dataset has been made freely available by the WGMS and its predecessor organizations and is widely used in scientific studies and assessment reports. The worldwide retreat of glaciers has become one of the most prominent icons of global climate change. Moreover, glacier decline has impacts on the local hazard situation, regional water availability, and global sea-level rise.

The retreat of glaciers from their Little Ice Age (LIA) moraines and trimlines can be observed in the field as well as on aerial and satellite images for tens of thousands of glaciers around the world. Large collections of historical and modern photographs (e.g., NSIDC, 2002, updated 2015) document this change in a qualitative manner. The dataset presented here allows these changes to be quantified at samples ranging from a few hundred to thousands of glaciers with observation series. There is a global trend to centennial glacier retreat from LIA maximum positions, with typical cumulative values of several hundred to a few thousand metres.

In various mountain ranges, glaciers with decadal response times have shown intermittent re-advances which, however, were short and thus much less extensive when compared to the overall frontal retreat. The most recent re-advance phases were reported from Scandinavia and New Zealand in the 1990s or from (mainly surge-type glaciers in) the Karakoram at the beginning of the 21st century. Early (geodetic) mass-balance measurements indicate moderate decadal ice losses of a few dm w.e. a^{-1} in the second half of the 19th and at the beginning of the 20th centuries, followed by increased ice losses around 0.4 m w.e. a^{-1} in the 1940s and 1950s. Larger data samples (from both glaciological and geodetic methods) with better global coverage adequately document the period of moderate ice loss which followed between the mid-1960s and mid-1980s, as well as the subsequent acceleration in ice loss to > 0.5 m w.e. a^{-1} in the early 21st century.

In the time period covered by the present bulletin, glaciers observed by the glaciological method lost about 1 m w.e. a^{-1}. This continues the historically unprecedented ice loss observed since the turn of the century and is more than double the ice loss rates of the 1990s. Recent global assessments estimate and correct for the bias in the glaciological sample (Zemp et al., 2020) and suggest that glaciers are currently contributing more than 1 mm to mean global sea-level rise, which corresponds to more than a quarter of the observed rise.

With their dynamic response to changes in climatic conditions – growth/reduction in area mainly through the advance/retreat of glacier tongues – glaciers re-adjust their extent to equilibrium conditions of ice geometry with a zero mass balance. Recorded mass balances document the degree of imbalance between glaciers and climate due to the delay in dynamic response caused by the characteristics of ice flow (deformation and sliding); over lengthy time intervals they depend on the rate of climatic forcing. With constant climatic conditions (no forcing), balances would tend towards and finally become zero. Long-term non-zero balances are, therefore, an expression of ongoing climate change and sustained forcing. Trends towards increasing non-zero balances are triggered by accelerated forcing. In the same way, comparison between present-day and past values of mass balance must take the changes in glacier area into account (Elsberg et al., 2001). Many of the relatively small glaciers, measured within the framework of the present mass balance observation network, have lost large percentages of their area during the past decades. The recent increase in the rates of ice loss over diminishing glacier surface areas, as compared with earlier losses related to larger surface areas, becomes even more pronounced and leaves no doubt about the accelerating change in climatic conditions, even if a part of the observed acceleration trend is likely to be caused by positive feedback processes.

Rising snowlines and cumulative mass losses lead to changes in the average albedo and to a continued surface lowering. Such effects cause pronounced positive feedbacks with respect to radiative and sensible heat fluxes.

Albedo changes are especially effective in enhancing melt rates and can also be caused by the input of dust (Oerlemans et al., 2009). The cumulative length change of glaciers is the result of all effects combined, and constitutes the key to a global intercomparison of decadal with secular mass losses. Surface lowering, thickness loss and the resulting reduction in driving stress and flow, however, increasingly replace processes of tongue retreat with processes of downwasting, disintegration or even the collapse of entire glaciers. Moreover, the thickness of most glaciers regularly observed for their mass balance is measured in (a few) tens of metres. From the measured mass losses and thickness reductions, it is evident that several network glaciers with important long-term observations may not survive for many more decades. A special challenge therefore consists in developing a strategy for ensuring the continuity of adequate mass-balance observations under such extreme conditions.

Key tasks for the future of glacier mass-balance monitoring include the continuation of (long-term) measurement series, the extension of the presently available dataset, especially in under-represented regions (Nussbaumer et al., 2017; Hoelzle et al., 2017; Gärtner-Roer et al., 2019), the quantitative assessment of uncertainties relating to available measurements (e.g., Magnússon et al., 2016), and their representativeness for changes in corresponding mountain ranges. The latter requires a well-considered integration of in-situ measurements, remotely sensed observations (e.g., Gardner et al., 2013; Wouters et al., 2019), and numerical modelling (e.g., Huss & Hock, 2018; Hock et al., 2019) taking into account the related spatial and temporal scales.

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REFERENCES

Aðalgeirsdóttir, G., Magnússon, E., Pálsson, F., Thorsteinsson, T., Belart, J., Jóhannesson, T., Hannesdóttir, H., Sigurðsson, O., Gunnarsson, A., Einarsson, B., Berthier, E., Steffensen Schmidt, L., Haraldsson, H.H. & H. Björnsson (2020): Glacier Changes in Iceland From ~ 1890 to 2019. Frontiers in Earth Science, 8, 520. https://doi.org/10.3389/feart.2020.523646

Ageta,Y. & K. Fujita (1996): Characteristics of mass balance of summer-accumulation type glaciers in the Himalayas and Tibetan Plateau. Zeitschrift für Gletscherkunde und Glazialgeologie, 32, Part 2: 61–65.

Aizen, V.B., Aizen, E.M., Melack, J.M. & J. Dozier (1997): Climate and hydrologic changes in the Tien Shan, Central Asia. Journal of Climate 10: 1393–1404.

Allison, I., Fierz, C., Hock, R., Mackintosh, A., Kaser, G. & S.U. Nussbaumer (2019): IACS: past, present, and future of the International Association of Cryospheric Sciences. History of Geo- and Space Sciences, 10 (1): 97–107.

Andreassen, L.M., Elvehøy, H., Kjøllmoen, B. & R. V. Engeset (2016): Reanalysis of long-term series of glaciological and geodetic mass balance for 10 Norwegian glaciers. The Cryosphere, 10 (2): 535–552.

Andreassen, L.M., Elvehøy, H.,Kjøllmoen, B. & J.M.C. Belart (2020): Glacier change in Norway since the 1960s – an overview of mass balance, area, length and surface elevation changes. Journal of Glaciology 66 (256): 313–328.

Azam, M.F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K., & J.S. Kargel (2018): Review of the status and mass changes of Himalayan-Karakoram glaciers. Journal of Glaciology, 64(243), 61-74.

Barandun, M., Fiddes, J., Scherler, M., Mathys, T., Saks, T., Petrakov, D., & M. Hoelzle (2020): The state and future of the cryosphere in Central Asia. Water Security, 11, 100072.

Barandun, M., Pohl, E., Naegeli, K., McNabb, R., Huss, M., Berthier, E., Saks, T. & M. Hoelzle (2021): Hot spots of glacier mass balance variability in Central Asia. Geophysical Research Letters, e2020GL092084. https://doi.org/10.1029/2020GL092084

Barcaza, G., Nussbaumer, S.U., Tapia, G., Valdés, J., García, J.-L., Videla, Y., Albornoz, A. & V. Arias (2017): Glacier inventory and recent glacier variations in the Andes of Chile, South America. Ann. Glaciol.: 1–15.

Bauder, A., Funk, M. & M. Huss (2007): Ice volume changes of selected glaciers in the Swiss Alps since the end of the 19th century. Annals of Glaciology, 46: 145–150.

Baumann, S., Anderson, B., Chinn, T., Mackintosh, A., Collier, C., Lorrey, A.M., Rack, W., Purdie, H. & S. Eaves (2021): Updated Inventory of Glacier Ice in New Zealand Based on 2016 Satellite Imagery. Journal of Glaciology, 1–14. https://doi.org/10.1017/jog.2020.78.

Belart J.M.C., Magnússon E., Berthier E., Gunnlaugsson Á.Þ., Pálsson F., Aðalgeirsdóttir G., Jóhannesson T., Thorsteinsson T. H. Björnsson (2020): Mass Balance of 14 Icelandic Glaciers, 1945–2017: Spatial Variations and Links With Climate. Front. Earth Sci. 8:163. doi: 10.3389/feart.2020.00163

Berthier, E., Larsen, C., Durkin, W.J., Willis, M.J., & M.E.Pritchard (2018): Brief communication: Unabated wastage of the Juneau and Stikine icefields (southeast Alaska) in the early 21st century. The Cryosphere, 12(4), 1523-1530.

Bjørk, A.A., Kjær, K.H., Korsgaard, N.J., Khan, S.A., Kjeldsen, K.K., Andresen, C.S. & S. Funder (2012): An aerial view of 80 years of climate-related glacier fluctuations in southeast Greenland. Nature Geoscience, 5 (6): 427–432.

Björnsson, H., Pálsson, F., Gudmundsson, S., Magnússon, E., Adalgeirsdóttir, G., Jóhannesson, T., Berthier, E., Sigurdsson, O. & Th. Thorsteinsson (2013): Contribution of Icelandic ice caps to sea level rise: trends and variability since the Little Ice Age. Geophysical Research Letters, 40 (8): 1546–1550.

Bolch, T., Pieczonka, T. & D.I. Benn (2011): Multi-decadal mass loss of glaciers in the Everest area (Nepal Himalaya) derived from stereo imagery. The Cryosphere, 5 (2): 349–358.

Bolch, T., Sandberg Sørensen, L., Simonsen, S.B., Mölg, N., Machguth, H., Rastner, P. & F. Paul (2013): Mass loss of Greenland‘s glaciers and ice caps 2003–2008 revealed from ICESat laser altimetry data. Geophysical Research Letters, 40 (5): 875–881.

Braun, L. & H. Escher-Vetter (2013): Gletscherforschung am Vernagtferner. Themenband aus Anlass der Gründung der Kommission für Glaziologie im Jahr 1962. Zeitschrift für Gletscherkunde und Glazialgeologie 45/46: 381 pp.

Braun, M.H., Malz, P., Sommer, C., Farías-Barahona, D., Sauter, T., Casassa, G., Soruco, A., Skvarca, P. & T.C. Seehaus (2019): Constraining glacier elevation and mass changes in South America. Nat. Clim. Change, 9: 130–136.

Brun, F., Berthier, E., Wagnon, P., Kääb, A. & D. Treichler (2017): A spatially resolved estimate of High Mountain Asia glacier mass balances from 2000 to 2016. Nature Geoscience, 10: 668–673.

Carr, J.R., Stokes, C. & A. Vieli (2014): Recent retreat of major outlet glaciers on Novaya Zemlya, Russian Arctic, influenced by fjord geometry and sea-ice conditions. Journal of Glaciology, 60 (219): 155–170.

Carrivick, J.L., James, W.H.M., Grimes, M., Sutherland J.L. & A.M. Lorrey (2020): Ice thickness and volume changes across the Southern Alps, New Zealand, from the little ice age to present. Sci Rep 10, 13392. https://doi.org/10.1038/s41598-020-70276-8

Carturan, L. (2016): Replacing monitored glaciers undergoing extinction: a new measurement series on La Mare Glacier (Ortles-Cevedale, Italy). Journal of Glaciology, 62 (236), 1093-1103. doi: 10.1017/jog.2016.107

Chinn, T.J. (1985): Structure and equilibrium of the dry valley glaciers. New Zealand Antarctica Records, 6: 73–88.

Chinn, T.J. (2001): Distribution of the glacial water resources of New Zealand. Journal of Hydrology New Zealand, 40 (2): 139–187.

Chinn, T.J., Heydenrych, C. & M.J. Salinger (2005): Use of the ELA as a practical method of monitoring glacier response to climate in New Zealand‘s Southern Alps. Journal of Glaciology, 51 (172): 85–95.

Citterio, M., Mottram, R., Larsen, S.H. & A. Ahlstrøm (2009): Glaciological investigations at the Malmbjerg mining prospect, central East Greenland. Geological Survey of Denmark and Greenland Bulletin, 17.

Clapperton, C.M., Sugden, D.E., Birnie, J. & M.J. Wilson (1989a): Late-glacial and Holocene glacier fluctuations and environmental change on South Georgia, Southern Ocean. Quaternary Research, 31 (2): 210–228.

Clapperton, C.M., Sugden, D.E. & M. Pelto (1989b): The relationship of land terminating and fjord glaciers to Holocene climatic change, South Georgia, Antarctica. In: Oerlemans, J. (ed.): Glacier fluctuations and climatic change. Dordrecht, Kluwer Academic Publishers, 57–75.

Cogley, J.G., Adams, W.P., Ecclestone, M.A., Jung-Rothenhäusler, F. & C.S.L. Ommanney (1996): Mass balance of White Glacier, Axel Heiberg Island, N.W.T., Canada, 1960–91. Journal of Glaciology, 42 (142): 548–563.

Cogley, J.G. & W.P. Adams (1998): Mass balance of glaciers other than the ice sheets. Journal of Glaciology, 44 (147): 315–325.

Cogley, J.G., Hock, R., Rasmussen, L.A., Arendt, A.A., Bauder, A., Braithwaite, R.J., Jansson, P., Kaser, G., Möller, M., Nicholson, L. & M. Zemp (2011): Glossary of glacier mass balance and related terms. IHP-VII Technical Documents in Hydrology No. 86, IACS Contribution No. 2, UNESCO-IHP, Paris, 114 pp.

Cook, A.J., Fox, A.J., Vaughan, D.G. & J.G. Ferrigno (2005): Retreating glacier fronts on the Antarctic Peninsula over the past half-century. Science, 308 (5721): 541–544.

Davaze, L., Rabatel, A., Dufour, A., Hugonnet, R., & Y. Arnaud (2020): Region-wide annual glacier surface mass balance for the European Alps from 2000 to 2016. Frontiers in Earth Science, 8. http://doi.org/10.3389/feart.2020.00149

Dehecq, A., Gourmelen, N., Gardner, A.S., Brun, F., Goldberg, D., Nienow, P.W., Berthier, E., Vincent, C., Wagnon, P. & E. Trouvé (2019): Twenty-first century glacier slowdown driven by mass loss in High Mountain Asia. Nature Geoscience 12, 22–27. https://doi.org/10.1038/s41561-018-0271-9

Dussaillant, I., Berthier, E., Brun, F., Masiokas, M.H., Hugonnet, R., Rabatel, A., Pitte, P. & L. Ruiz (2019): Two decades of glacier mass loss along the Andes. Nature Geoscience, 12: 802–808.

Elsberg, D.H., Harrison, W.D., Echelmeyer, K.A. & R.M. Krimmel (2001): Quantifying the effects of climate and surface change on glacier mass balance. Journal of Glaciology, 47: 649–658.

Falaschi, D., Bolch, T., Lenzano, M.G., Tadono, T., Lo Vecchio, A. & L. Lenzano (2018): New evidence of glacier surges in the Central Andes of Argentina and Chile. Prog. Phys. Geogr. Earth Environ., 030913331880301.

Falaschi D., Lenzano M.G., Villalba R., Bolch T., Rivera A. & A. Lo Vecchio (2019): Six Decades (1958–2018) of Geodetic Glacier Mass Balance in Monte San Lorenzo, Patagonian Andes. Front. Earth Sci. 7:326. doi: 10.3389/feart.2019.00326

Farías-Barahona, D., Sommer, C., Sauter, T., Bannister, D., Seehaus, T.C., Malz, P., Casassa, G., Mayewski, P.A., Turton, J.V., & M.H. Braun (2020): Detailed quantification of glacier elevation and mass changes in South Georgia. Environmental Research Letters, 15(3), 034036. https://doi.org/10.1088/1748-9326/ab6b32

Farinotti, D., Huss, M., Bauder, A., Funk, M. & M. Truffer (2009): A method to estimate the ice volume and ice-thickness distribution of alpine glaciers. Journal of Glaciology, 55 (191): 422–430.

Farinotti, D., Longuevergne, L., Moholdt, G., Duethmann, D., Mölg, T., Bolch, T., Vorogushyn, S. & A. Güntner (2015): Substantial glacier mass loss in the Tien Shan over the past 50 years. Nature Geoscience, 8 (9): 716–722.

Farinotti, D., Huss, M., Fürst, J.J., Landmann, J., Machguth, H., Maussion, F. & A. Pandit (2019): A consensus estimate for the ice thickness distribution of all glaciers on Earth. Nat. Geosci. 12, 168–173 (2019). https://doi.org/10.1038/s41561-019-0300-3

Ferri L., Dussaillant I., Zalazar L., Masiokas M.H., Ruiz L., Pitte P., Gargantini H., Castro M., Berthier E. & R. Villalba (2020): Ice Mass Loss in the Central Andes of Argentina Between 2000 and 2018 Derived From a New Glacier Inventory and Satellite Stereo-Imagery. Front. Earth Sci. 8:530997. doi: 10.3389/feart.2020.530997

Fischer, M., Huss, M. & M. Hoelzle (2015): Surface elevation and mass changes of all Swiss glaciers 1980–2010, The Cryosphere, 9 (2): 525–540.

Foresta, L., Gourmelen, N., Pálsson, F., Nienow, P., Björnsson, H. & A. Shepherd (2016): Surface elevation change and mass balance of Icelandic ice caps derived from swath mode CryoSat-2 altimetry. Geophysical Research Letters , 43, 23: 12,138–12,145.

Forel, F.A. (1895): Les variations périodiques des glaciers. Discours préliminaire. Extrait des Archives des Sciences physiques et naturelles, XXXIV: 209–229.

Fujita, K. & Y. Ageta (2000): Effect of summer accumulation on glacier mass balance on the Tibetan Plateau revealed by mass-balance model. Journal of Glaciology, 46 (153): 244–252.

Gardner, A.S., Moholdt, G., Cogley, J.G., Wouter, B., Arendt, A.A., Wahr, J., Berthier, E.,Hock, R., Pfeffer W.T., Kaser, G., Ligtenberg, S.R.M., Bolch, T., Sharp, M.J., Hagen, J.O., van den Broeke, M.R. & F. Paul (2013): A Reconciled Estimate of Glacier Contributions to Sea Level Rise: 2003 to 2009. Science 340 (6134): 852–857.

Gärtner-Roer, I., Nussbaumer, S.U., Hüsler, F. & M. Zemp (2019): Worldwide assessment of national glacier monitoring and future perspectives. Mountain Research and Development, 39 (2): A1–A11.

Gardelle, J., Berthier, E. & Y. Arnaud (2013): Slight mass gain of Karakoram glaciers in the early twenty-first century. Nature Geoscience, 5 (5): 322–325.

GCOS (2010): Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC (2010 Update), 180 pp.

Geoestudios (2014): Estimación de volúmenes de hielo mediante sondajes de radar en zonas norte, central y sur. Technical Report, DGA S.I.T. No 338.

GLAMOS (2020): The Swiss Glaciers 2017/18 and 2018/19, Bauder, A., Huss, M. & A. Linsbauer (edd.), Glaciological Report No. 139/140 of the Cryospheric Commission (EKK) of the Swiss Academy of Sciences (SCNAT) published by VAW / ETH Zürich, doi: 10.18752/glrep_139-140.

Grab, M., Mattea, E., Bauder, B., Huss, M., Rabenstein, L., Hodel, E., Linsbauer, A., Hellmann, S., Church, G., Langhammer, L., Schmid, L., Deleze, K, Schaer, P., Lathion, P., Farinotti, D. & H. Maurer (2021): Ice thickness distribution of all Swiss glaciers based on extended ground-penetrating radar data and glaciological modeling. Journal of Glaciology 1–19. https://doi.org/10.1017/jog.2021.55

Grove, J.M. (2004): Little Ice Ages: ancient and modern. Vol. I + II, 2nd edition. Routledge, London and New York.

GTOS (2009): Assessment of the status of the development of the standards for the terrestrial Essential Climate Variables: T06 – Glaciers and Ice Caps. Zemp, M., I. Gärtner-Roer, W. Haeberli, M. Hoelzle, F. Paul, R. Armstrong, R. Barry, J. Cihlar, A. Kääb, J. Kargel, S. J. Khalsa, M. Monteduro, B. Raup, G. Seiz, and R. Sessa (eds.), Global Terrestrial Observing System, 61, 17 pp.

GTN-G (2017): GTN-G Glacier Regions. Global Terrestrial Network for Glaciers. Doi:10.5904/gtng-glacreg-2017-07

Gurney, S.D., Popovnin, V.V., Shahgedanova, M. & C.R. Stokes (2008): A glacier inventory for the Buordakh Massif, Cherskiy Range, Northeast Siberia, and evidence for recent glacier recession. Arctic, Antarctic and Alpine Research, 40 (1): 81–88.

Haeberli, W. (1998): Historical evolution and operational aspects of worldwide glacier monitoring. In: W. Haeberli, M. Hoelzle and S. Suter (eds.), Into the second century of world glacier monitoring: prospects and strategies. Studies and reports in hydrology. UNESCO, Paris, 35–51.

Haeberli, W., Cihlar, J. & R.G. Barry (2000): Glacier monitoring within the Global Climate Observing System. Annals of Glac., 31: 241–246.

Haeberli, W., Oerlemans, J., and M. Zemp (2019): The future of Alpine glaciers and beyond. In: Oxford Research Encyclopedia of Climate Science. Oxford University Press. doi: http://dx.doi.org/10.1093/acrefore/9780190228620.013.769

Hannesdóttir, H., Björnsson, H., Pálsson, F., Aðalgeirsdóttir, G. & S. Guðmundsson (2015): Variations of southeast vatnajökull ice cap (Iceland) 1650–1900 and reconstruction of the glacier surface geometry at the little ice age maximum. Geografiska Annaler: Series A, Physical Geography, 97, 2: 237–264.

Hastenrath, S. (2001): Variations of East African climate during the past two centuries. Climatic Change, 50 (1–2): 209–217.

Hock, R., Marzeion, B., Bliss, A., Giesen, R., Hirabayashi, Y., Huss, M., Radic, V. & A. Slangen (2019): GlacierMIP - A model intercomparison of global-scale glacier mass-balance models and projections. Journal of Glaciology, 65 (251), 453-467, doi:10.1017/jog.2019.22.

Hoelzle, M. & M. Trindler (1998): Data management and application. In: W. Haeberli, M. Hoelzle and S. Suter (eds.), Into the second century of world glacier monitoring: prospects and strategies. Studies and reports in hydrology. UNESCO, Paris, 53–72.

Hoelzle, M., Azisov, E., Barandun, M., Huss, M., Farinotti, D., Gafurov, A., Hagg, W., Kenzhebaev, R., Kronenberg, M., Machguth, H., Merkushkin, A., Moldobekov, B., Petrov, M., Saks, T., Salzmann, N., Schöne, T., Tarasov, Y., Usubaliev, R., Vorogushyn, S., Yakovlev, A. & M. Zemp (2017): Re-establishing glacier monitoring in Kyrgyzstan and Uzbekistan, Central Asia. Geoscientific Instrumentation, Methods and Data Systems, 6 (2): 397–418.

Holzer, N., Vijay, S., Yao, T., Xu, B., Buchroithner, M. & T. Bolch (2015): Four decades of glacier variations at Muztagh Ata (eastern Pamir):a multi-sensor study including Hexagon KH-9 and Pléiades data. The Cryosphere, 9: 2071–2088.

Huber, J., McNabb, R. & M. Zemp (2020): Elevation changes of west-central Greenland glaciers from 1985 to 2012 from remote sensing. Frontiers in Earth Science 8 (35). doi: https://doi.org/10.3389/feart.2020.00035

Hugonnet, R., McNabb, R., Berthier, E., Menounos, B., Nuth, C., Girod, L., et al. (2021): Accelerated global glacier mass loss in the early twenty-first century. Nature, 592(7856), 726-731. doi: 10.1038/s41586-021-03436-z

Huss, M. (2013): Density assumptions for converting geodetic glacier volume change to mass change. The Cryosphere, 7 (3): 877–887.

Huss, M. & R. Hock (2018): Global-scale hydrological response to future glacier mass loss. Nature Climate Change, 8: 135–140.

Huss, M. & D. Farinotti (2012): Distributed ice thickness and volume of all glaciers around the globe. J. Geophys. Res., 117, F04010, doi:10.1029/2012JF002523

Huss, M., Dhulst, L. & A. Bauder (2015): New long-term mass-balance series for the Swiss Alps. Journal of Glaciology, 61 (227): 551–562.

Jakob, L., Gourmelen, N., Ewart, M. & S. Plummer (2020): Ice loss in High Mountain Asia and the Gulf of Alaska observed by CryoSat-2 swath altimetry between 2010 and 2019. The Cryosphere, Copernicus Publications. https://doi.org/10.5194/tc-2020-176

Jiao, J., Zhang, Y., Bilker-Koivula, M., Poutanen, M., Yin, P. & Y. Zhang (2020): Interannual glacier and lake mass changes over Scandinavia from GRACE. Geophysical Journal International 221,3: 2126–2141, https://doi.org/10.1093/gji/ggaa146

Jóhannesson, T., Pálmason, B., Hjartarson, Á, Jarosch, A., Magnússon, E., Belart, J., & M. Gudmundsson (2020): Non-surface mass balance of glaciers in Iceland. Journal of Glaciology, 66(258), 685-697. doi:10.1017/jog.2020.37

Kaser, G. & H. Osmaston (2002): Tropical glaciers. Cambridge University Press, Cambridge.

Kaser, G., Cogley, J.G., Dyurgerov, M.B., Meier, M.F. & A. Ohmura (2006): Mass balance of glaciers and ice caps: consensus estimates for 1961–2004. Geophysical Research Letters, 33(19), L19501, doi:10.1029/2006GL027511.

Kaufmann, D.S., Porter, S.C. & A.R. Gillespie (2004): Quaternary alpine glaciation in Alaska, the Pacific Northwest, Sierra Nevada, and Hawaii. In: Gillespie, A.R., Porter, S.C. & B.F. Atwater (eds.): The Quaternary period in the United States. Elsevier, Amsterdam.

Kotlyakov, V.M. (2006): Glaciation in North and Central Eurasia at present time. Nauka, Moscow (in Russian with abstract in English), 1–481.

Kotlyakov, V.M., Grosswald, M.G., Dyurgerov, M.B. & V.L. Mazo (1991): The reaction of glaciers to impending climate change. Polar Geography and Ecology, 15 (3): 203–217.

Kuhn, M., Markl, G., Kaser, G., Nickus, U., Obleitner, F., & H. Schneider (1985): Fluctuations of climate and mass balance: Different responses of two adjacent glaciers. Zeitschrift für Gletscherkunde und Glazialgeologie, 21: 409–416.

Kuhn, M., Dreiseitl, E., Hofinger, S., Markl, G., Span, N. & G. Kaser (1999): Measurements and models of the mass balance of Hintereisferner. Geografiska Annaler, A81 (4): 659–670.

Kutuzov, S. (2005): The retreat of Tien Shan glaciers since the Little Ice Age obtained from the moraine positions, aerial photographs and satellite images. In: PAGES Second Open Science Meeting 10–12 August 2005, Beijing, China.

Kutuzov, S., Lavrentiev, I., Smirnov, A., Nosenko, G., & D. Petrakov (2019): Volume changes of Elbrus Glaciers from 1997 to 2017. Frontiers in Earth Science, 7, 153. https://doi.org/10.3389/feart.2019.00153

Landmann, J.M., Künsch, H.R., Huss, M., Ogier, C., Kalisch, M. & D. Farinotti (2021): Assimilating near real-time mass balance observations into a model ensemble using a particle filter. The Cryosphere Discussion. doi: 10.5194/tc-2020-281

Larsen, C.F., Burgess, E., Arendt, A.A., O'Neel, S., Johnson, A.J. & C. Kienholz (2015): Surface melt dominates Alaska glacier mass balance. Geophysical Research Letters, 42 (14): 5902–5908.

Lieb, G.K. & A. Kellerer-Pirklbauer (2019): Sammelbericht über die Gletschermessungen des Österreichischen Alpenvereins im Jahre 2019. Bergauf 02/2019, 74 (144): 20–29.

Le Bris, R. & F. Paul (2015): Glacier-specific elevation changes in parts of western Alaska. Annals of Glaciology, 56 (70): 184–192.

Letreguilly, A. & L. Reynaud (1990): Space and time distribution of glacier mass-malance in the Northern Hemisphere. Arctic and Alpine Research, 22 (1): 43–50.

Lopez, P., Chevallier, P., Favier, V., Pouyaud, B., Ordenes, F. & J. Oerlemans (2010): A regional view of fluctuations in glacier length in southern South America. Glob. Planet. Change, 71 (1–2): 85–108.

Machguth, H., Thomsen, H.H., Weidick, A., Abermann, J., Ahlstrøm, A.P., Andersen, M.L., Andersen, S.B., Bjørk, A.A., Box, J.E., Braithwaite, R.J., Bøggild, C.E., Citterio, M., Clement, P., Colgan, W., Fausto, R.S., Gleie, K., Hasholt, B., Hynek, B., Knudsen, N.T., Larsen, S.H., Mernild, S., Oerlemans, J., Oerter, H., Olesen, O.B., Smeets, C.J.P.P., Steffen, K., Stober, M., Sugiyama, S., van As, D., van den Broeke, M.R & R.S. van de Wal (2016): Greenland surface mass balance observations from the ice sheet ablation area and local glaciers. Journal of Glaciology, 62 (235): 861–887.

Mackintosh, A.N., Anderson, B.M., Lorrey, A.M., Renwick, J.A., Frei, P. & S.M. Dean (2017): Regional cooling caused recent New Zealand glacier advances in a period of global warming. Nature Communications, 8, 14202, doi:10.1038/ncomms14202.

Magnússon, E., Muñoz-Cobo Belart, J., Pálsson, F., Ágústsson, H. & P. Crochet (2016): Geodetic mass balance record with rigorous uncertainty estimates deduced from aerial photographs and lidar data – case study from Drangajökull ice cap, NW Iceland. The Cryosphere, 10 (1): 159–177.

Malz, P., Meier, W., Casassa, G., Jaña, R., Skvarca, P. & M. Braun (2018): Elevation and mass changes of the Southern Patagonia Icefield derived from TanDEM-X and SRTM data. Remote Sens. 10 (2): 188.

Masiokas, M.H., Rivera, A., Espizua, L.E., Villalba, R., Delgado, S. & J.C. Aravena (2009): Glacier fluctuations in extratropical South America during the past 1000 years. Palaeogeography, Palaeoclimatology, Palaeoecology, 281 (3–4): 242–268.

McNabb, R.W. & R. Hock (2014): Alaska tidewater glacier terminus positions, 1948–2012. Journal of Geophysical Research: Earth Surface, 119 (2): 153–167.

McNeil, C., O'Neel, S., Loso, M., Pelto, M., Sass, L., Baker, E. H., & S. Campbell (2020): Explaining mass balance and retreat dichotomies at Taku and Lemon Creek Glaciers, Alaska. Journal of Glaciology, 66(258), 530-542.

Meier, W.J.-H., Grießinger, J., Hochreuther, P. & M.H. Braun (2018): An updated multi-temporal glacier inventory for the Patagonian Andes with changes between the Little Ice Age and 2016. Front. Earth Sci. 6.

Melkonian, A.K., Willis, M.J., Pritchard, M.E. & A.J. Stewart (2016): Recent changes in glacier velocities and thinning at Novaya Zemlya. Remote Sensing of Environment, 174: 244–257.

Menounos, B., Hugonnet, R., Shean, D., Gardner, A., Howat, I., Berthier, E., Pelto, B., Tennant, C., Shea, J., Myoung-Jong, N., Brun, F. & A. Dehecq (2019): Heterogeneous changes in western North American glaciers linked to decadal variability in zonal wind strength. Geophysical Research Letters, 46(1), 200-209. https://doi.org/10.1029/2018GL080942

Mercanton, P.-L. (1916): Vermessungen am Rhonegletscher 1874–1915. Neue Denkschriften der Schweizerischen Naturforschenden Gesellschaft (SNG), Band 52. Kommissions-Verlag von Georg & Co., Basel, 190 pp.

Mernild, S.H., Lipscomb, W.H., Bahr, D.B., Radić, V. & M. Zemp (2013): Global glacier changes: a revised assessment of committed mass losses and sampling uncertainties. The Cryosphere, 7 (5): 1565–1577.

Milana, J.P. & A. Maturano (1999): Application of radio echo sounding at the arid Andes of Argentina: the Agua Negra Glacier. Global and Planetary Change 22: 179-191.

Molnia, B.F. (2007): Late nineteenth to early twenty-first century behaviour of Alaskan glaciers as indicators of changing regional climate. Global and Planetary Change, 56 (1–2): 23–56.

Morris, A., Moholdt, G., & L. Gray (2020): Spread of Svalbard Glacier Mass Loss to Barents Sea Margins Revealed by CryoSat-2. Journal of Geophysical Research: Earth Surface, 125(8), e2019JF005357. https://doi.org/10.1029/2019JF005357

Nesje, A., Bakke, J., Dahl, S.O., Lie, O. & J.A. Matthews (2008): Norwegian mountain glaciers in the past, present and future. Global and Planetary Change, 60 (1–2): 10–27.

Noël, B., van de Berg, W.J., Lhermitte, S., Wouters, B., Schaffer, N., & M.R. van den Broeke (2018): Six decades of glacial mass loss in the Canadian Arctic Archipelago. Journal of Geophysical Research: Earth Surface, 123(6), 1430-1449.

Nussbaumer, S.U., Hoelzle, M., Hüsler, F., Huggel, C., Salzmann, N., & M. Zemp (2017): Glacier monitoring and capacity building: important ingredients for sustainable mountain development. Mountain Research and Development, 37 (1): 141–152.

Nuth, C., Schuler, T.V., Kohler, J., Altena, B., & J.O. Hagen (2012): Estimating the long term calving flux of Kronebreen, Svalbard, from geodetic elevation changes and mass balance modelling. J. Glaciol., 58 (207): 119–123.

NSIDC (2002, updated 2015): Glacier Photograph Collection. U.S. National Snow and Ice Data Center, Boulder, Colorado, USA. Digital media. Online available from: http://nsidc.org/data/glacier_photo/

NVE (2019): Glaciological investigations in Norway 2018. B. Kjøllmoen, L.M. Andreassen, H. Elvehøy & M. Jackson (eds.), NVE Rapport 46-2019, 84 pp +app.

Oerlemans, J. (2011): Minimal Glacier Models. Second edition. Igitur, Utrecht University: 103 pp.

Oerlemans, J., Giesen, R.H. & M.R. van den Broeke (2009): Retreating alpine glaciers: increased melt rates due to accumulation of dust (Vadret da Morteratsch, Switzerland). Journal of Glaciology 55 (192): 729–736.

O'Neel, S., McNeil, C., Sass, L., Florentine, C., Baker, E., Peitzsch, E., McGrath, D., Fountain, A. & D. Fagre (2019): Reanalysis of the US Geological Survey Benchmark Glaciers: Long-term insight into climate forcing of glacier mass balance. J. of Glac., 65 (253): 850–866.

Østrem, G. & M. Brugman (1991): Glacier mass-balance measurements: a manual for field and office work. National Hydrology Research Institute, NHRI Science Report No. 4.

Pelto, M.S. (2018): How unusual was 2015 in the 1984-2015 period of the North Cascade glacier annual mass balance? Water 10, 543.

Pelto, M.S. & C. Brown (2012): Mass balance loss of Mount Baker, Washington glaciers 1990–2010. Hydrological Processes, 26 (17): 2601–2607.

Pieczonka, T. & T. Bolch (2015): Region-wide glacier mass budgets and area changes for the Central Tien Shan between ~1975 and 1999 using Hexagon KH-9 imagery. Global and Planetary Change, 128: 1–13.

Pitte, P., Berthier, E., Masiokas, M.H., Cabot, V., Ruiz, L., Ferri Hidalgo, L., Gargantini, H. & L. Zalazar (2016): Geometric evolution of the Horcones Inferior Glacier (Mount Aconcagua, Central Andes) during the 2002-2006 surge: Horcones Inferior Glacier Surge. J. Geophys. Res. Earth Surf. 121 (1): 111–127.

Pope E.L., Willis, I.C., Pope, A., Miles, E.S., Arnold, N.S. & W.G. Rees (2016): Contrasting snow and ice albedos derived from MODIS, Landsat ETM+ and airborne data from Langjökull, Iceland. Remote Sensing of Environment, 175: 183–195.

Popovnin, V.V., T.A. Danilova & D.A. Petrakov (1999): A pioneer mass balance estimate for a Patagonian glacier: Glaciar De los Tres, Argentina.Global and Planetary Change 22 (1–4): 255–267.

Prinz, R., Fischer, A., Nicholson, L. & G. Kaser (2011): Seventy-six years of mean mass balance rates derived from recent and re-evaluated ice volume measurements on tropical Lewis Glacier, Mount Kenya. Geophysical Research Letters, 38 (20), L20502, doi:10.1029/2011GL049208.

PSFG (1967): Fluctuations of Glaciers 1959–1965 (Vol. I). P. Kasser (ed.), IASH (ICSI) / UNESCO, Permanent Service on Fluctuations on Glaciers, Zurich, Switzerland, 52 pp.

Rabatel, A., Francou, B., Soruco, A., Gomez, J., Cáceres, B., Ceballos, J. L., Basantes, R., Vuille, M., Sicart, J.-E., Huggel, C., Scheel, M., Lejeune, Y., Arnaud, Y., Collet, M., Condom, T., Consoli, G., Favier, V., Jomelli, V., Galarraga, R., Ginot, P., Maisincho, L., Mendoza, J., Ménégoz, M., Ramirez, E., Ribstein, P., Suarez, W., Villacis, M. & P. Wagnon (2013): Current state of glaciers in the tropical Andes: a multi-century perspective on glacier evolution and climate change. The Cryosphere, 7 (1): 81–102.

Rankl M., Kienholz C. & M. Braun (2014): Glacier changes in the Karakoram region mapped by multimission satellite imagery. The Cryosphere, 8 (3): 977–989.

Rastner, P., Bolch, T., Mölg, N., Machguth, H., Le Bris, R. & F. Paul (2012): The first complete inventory of the local glaciers and ice caps on Greenland. The Cryosphere, 6 (6): 1483–1495.

Rets, E.P., Popovnin, V.V., Toropov, P.A., Smirnov, A.M., Tokarev, I.V., Chizhova, J.N., Budantseva, N.A., Vasil'chuk, Y.K., Kireeva, M.B., Ekaykin, A.A., Veres, A.N., Aleynikov, A.A., Frolova, N.L., Tsyplenkov, A.S., Poliukhov, A.A., Chalov, S.R., Aleshina, M.A., and E.D. Kornilova (2019): Djankuat glacier station in the North Caucasus, Russia: a database of glaciological, hydrological, and meteorological observations and stable isotope sampling results during 2007–2017, Earth Syst. Sci. Data, 11, 1463–1481, https://doi.org/10.5194/essd-11-1463-2019.

RGI Consortium (2017): Randolph Glacier Inventory (RGI) – a dataset of global glacier outlines: Version 6.0. Technical Report, Global Land Ice Measurements from Space, Boulder, Colorado, USA. Digital Media. Doi:10.7265/N5-RGI-60.

Rignot, E., Rivera, A. & G. Cassasa (2003): Contribution of the Patagonia Icefields to sealevel rise. Science, 302: 434–437.

Roberts, S.J., Hodgson, D.A., Shelley, S., Royles, J., Griffiths, H.J., Deen, T.J. & M.A. Thorne (2010): Establishing lichenometric ages for nineteenth and twentieth century glacier fluctuations on South Georgia (South Atlantic). Geografiska Annaler: Series A, Physical Geography, 92 (1): 125–139.

Salinger, M.J., Fitzharris, B.B., & T. Chinn (2021): Extending End-of-Summer-Snowlines for the Southern Alps Glaciers of New Zealand back to 1949. International Journal of Climatology. https://doi.org/10.1002/joc.7177

Schöne, T., Zech, C.,Unger-Shayesteh, K., Rudenko, V., Thoss, H., Wetzel, H.-U., Gafurov, A., Illigner, J. & A. Zubovich (2013): A new permanent multi-parameter monitoring network in Central Asian high mountains - from measurements to data bases. Geoscientific Instrumentation, Methods and Data Systems 2:97-111 https://doi.org/10.5194/gi-2-97-2013.

Schuler T.V., Kohler J., Elagina N., Hagen J.O.M., Hodson A.J., Jania J.A., Kääb A.M., Luks B., Małecki J., Moholdt G., Pohjola V.A., Sobota I. & W.J.J. Van Pelt (2020): Reconciling Svalbard Glacier Mass Balance. Front. Earth Sci. 8:156. doi: 10.3389/feart.2020.00156

Shea, J.M., Menounos, B., Moore, R.D. & C. Tennant (2013): An approach to derive regional snow lines and glacier mass change from MODIS imagery, western North America. The Cryosphere, 7 (2): 667–680.

Shean, D.E., Bhushan, S., Montesano, P., Rounce, D.R., Arendt, A., & B. Osmanoglu (2020): A systematic, regional assessment of high mountain Asia glacier mass balance. Frontiers in Earth Science, 7, 363. https://doi.org/10.3389/feart.2019.00363

Sigurðsson, O. (2005): Variations of termini of glaciers in Iceland in recent centuries and their connection with climate. In: Caseldine, C., Russell, A., Harðardóttir, J. & Ó. Knudsen (eds.): Iceland – modern processes and past environments. Developments in Quaternary Science, 5: 241–258.

Sobota, I. (2013): Recent changes of cryosphere of north-western Spitsbergen based on Kaffiøyra region. Wydawnictwo UMK, Toruń, 449 pp [in polish].

Sobota, I. (2017): Selected problems of snow accumulation on glaciers during long-term studies in north-western Spitsbergen, Svalbard. Geografiska Annaler: Series A, Physical Geography, 1–16.

Sobota, I. (2021): Atlas of changes in the glaciers of Kaffiøyra (Svalbard, the Arctic). Ed. Nicolaus Copernicus University Press, 219 pp.

Sobota I., Nowak, M. & P. Weckwerth (2016): Long-term changes of glaciers in north-western Spitsbergen. Global and Planetary Change, 144: 182–197.

Solomina, O. (1996): Glaciers recession in the mountains of the former USSR after the maximum of the Little Ice Age: Time and scale. In: The proceedings of Meeting of the Work Group on Geospatial Analysis of Glaciated Environments. IUQR, Dublin.

Solomina, O. (2000): Retreat of mountain glaciers of northern Eurasia since the Little Ice Age maximum. Annals of Glaciology, 31: 26–30.

Sommer, C., Malz, P., Seehaus, T.C., Lippl, S., Zemp, M., and M.H. Braun (2020a): Rapid glacier retreat and downwasting throughout the European Alps in the early 21st century. Nature Communications, 11, 3209. https://doi.org/10.1038/s41467-020-16818-0.

Sommer, C., Seehaus, T., Glazovsky, A., and M.H. Braun (2020b): Brief communication: Accelerated glacier mass loss in the Russian Arctic (2010–2017), The Cryosphere Discuss. [preprint], https://doi.org/10.5194/tc-2020-358, in review.

Sorg, A., Bolch, T., Stoffel, M., Solomina, O. & M. Beniston (2012): Climate change impacts on glaciers and runoff in Tien Shan (Central Asia). Nature Climate Change, 2 (10): 725–731.

Strelin, J. & R. Iturraspe (2007): Recent evolution and mass balance of Cordón Martial glaciers, Cordillera Fueguina Oriental. Global and Planetary Change 59 (1-4): 17-26. https://doi.org/10.1016/j.gloplacha.2006.11.019

Stumm, D., Joshi, S.P., Salzmann, N. & S. MacDonell (2017): In situ monitoring of mountain glaciers. Experiences from mountain ranges around the world and recommendations for the Hindu Kush Himalaya. ICIMOD, Kathmandu, Nepal (http://lib.icimod.org/record/32696/files/icimodWP7-017.pdf)

Stumm, D., Joshi, S.P., Gurung, T.R. & G. Silwal (2021): Mass balance of Yala and Rikha Samba Glacier, Nepal from 2000 to 2017. Earth System Science Data, 13: 3791–3818. https://doi.org/10.5194/ essd-13-3791-2021

Su, Z. & Y. Shi (2002): Response of monsoonal temperature glaciers to global warming since the Little Ice Age. Quaternary International, 97 (98): 123–131.

Svendsen, J.I. & J. Mangerud (1997): Holocene glacial and climatic variations on Spitsbergen, Svalbard. The Holocene, 7 (1): 45–57.

Thorarinsson, S. (1943): Vatnajökull. The scientific results of the Swedish-Icelandic investigations 1936-37-38. Chapter XI. Oscillations of the Icelandic glaciers in the last 250 years. Geografiska Annaler, 25 (1–2): 1–56.

Tennant, C. & B. Menounos (2013): Glacier change of the Columbia Icefield, Canadian Rocky Mountains, 1919–2009. Journal of Glaciology, 59 (216): 671–686.

Tennant, C., Menounos, B., Wheate, R. & J.J. Clague (2012): Area change of glaciers in the Canadian Rocky Mountains, 1919 to 2006. The Cryosphere, 6 (6): 1541–1552.

Thomson, L. & L. Copland (2016): White Glacier 2014, Axel Heiberg Island, Nunavut: mapped using Structure from Motion methods. Journal of Maps, 12 (5): 1063–1071.

Thomson, L., Zemp, M., Copland, L., Cogley, G. & M. Ecclestone (2017): Comparison of geodetic and glaciological mass budgets for White Glacier, Axel Heiberg Island, Canada. Journal of Glaciology, 63 (237): 55–66.

Tielidze, L.G. & R.D. Wheate (2018): The Greater Caucasus Glacier Inventory (Russia, Georgia and Azerbaijan). The Cryosphere, 12: 81–94.

Tielidze, L.G., Bolch, T., Wheate, R.D., Kutuzov, S.S., Lavrentiev, I.I., and M. Zemp (2020): Supra-glacial debris cover changes in the Greater Caucasus from 1986 to 2014, The Cryosphere, 14, 585–598, https://doi.org/10.5194/tc-14-585-2020.

Unger-Shayesteh, K., Vorogushyn, S., Farinotti, D., Gafurov, A., Duethmann, D., Mandychev, A. & B. Merz (2013): What do we know about past changes in the water cycle of Central Asian headwaters? A review. Global and Planetary Change, 110: 4–25.

Vijay, S. & M. Braun (2016): Elevation change rates of glaciers in the Lahaul-Spiti (Western Himalaya, India) during 2000–2012 and 2012–2013. Remote Sensing, 8(12), 1038, doi:10.3390/rs8121038.

Wagnon P., Ribstein P., Francou B. & J.E. Sicart (2001): Anomalous heat and mass budget of Glaciar Zongo, Bolivia, during the 1997/98 El Nĩno year. Journal of Glaciology, 47 (156): 21–28.

Welty, E., Zemp, M., Navarro, F., Huss, M., Fürst, J.J., Gärtner-Roer, I., Landmann, J., Machguth, H., Naegeli, K., Andreassen, L.M., Farinotti, D., Li, H. & GlaThiDa Contributors (2020): Worldwide version-controlled database of glacier thickness observations. Earth System Science Data 12, 3039-3055. doi: 10.5194/essd-12-3039-2020

WGMS (1991): Glacier Mass Balance Bulletin No. 1 (1988–1989). Haeberli, W. & E. Herren (eds.), IAHS (ICSI) / UNEP / UNESCO, World Glacier Monitoring Service, Zurich, Switzerland, 70 pp.

WGMS (2008): Global Glacier Changes: facts and figures. Zemp, M., Roer, I., Kääb, A., Hoelzle, M., Paul, F. & W. Haeberli (eds.), UNEP, World Glacier Monitoring Service, Zurich, Switzerland, 88 pp.

WGMS (2012): Fluctuations of Glaciers 2005–2010, Volume X. Zemp, M., Frey, H., Gärtner-Roer, I., Nussbaumer, S.U., Hoelzle, M., Paul, F. & W. Haeberli (eds.), ICSU(WDS)/IUGG(IACS)/UNEP/UNESCO/WMO, World Glacier Monitoring Service, Zurich, 336 pp.

WGMS (2013): Glacier Mass Balance Bulletin No. 12 (2010–2011). Zemp, M., Nussbaumer, S.U., Naegeli, K., Gärtner-Roer, I., Paul, F., Hoelzle, M. & W. Haeberli (eds.), ICSU (WDS) / IUGG (IACS) / UNEP / UNESCO / WMO, World Glacier Monitoring Service, Zurich, Switzerland, 106 pp.

WGMS (2017): Global Glacier Change Bulletin No. 2 (2014-2015). Zemp, M., Nussbaumer, S. U., Gärtner-Roer, I., Huber, J., Machguth, H., Paul, F., and Hoelzle, M. (eds.), ICSU(WDS)/IUGG(IACS)/UNEP/UNESCO/WMO, World Glacier Monitoring Service, Zurich, Switzerland, 244 pp.

WGMS (2020): Global Glacier Change Bulletin No. 3 (2016-2017). Zemp, M., Gärtner-Roer, I., Nussbaumer, S.U., Bannwart, J., Rastner, P., Paul, F. & M. Hoelzle (eds.), ISC(WDS)/IUGG(IACS)/UNEP/UNESCO/WMO, World Glacier Monitoring Service, Zurich, Switzerland, 274 pp.

Wouters, B. Gardner, A.S. & G. Moholdt (2019): Global glacier mass loss during the GRACE satellite mission (2002-2016). Frontiers in Earth Science, 7: 96.

Yang, R., Hock, R., Kang, S., Shangguan, D., & W. Guo (2020): Glacier mass and area changes on the Kenai Peninsula, Alaska, 1986–2016. Journal of Glaciology, 66(258), 603-617.

Zalazar, L., Ferri Hidalgo, L., Castro, M., Gargantini, H., Gimenéz, M., Pitte, P., Ruiz, L., Masiokas, M. & R. Villalba (2017): Glaciares de Argentina: resultados preliminares del Inventario Nacional de Glaciares. Rev. Glaciares Ecosistemas Mont., 2: 13–22.

Žebre, M., Colucci, R.R., Giorgi, F., Glasser, N.F., Racoviteanu, A.E., & C. Del Gobbo (2021): 200 years of equilibrium-line altitude variability across the European Alps (1901− 2100). Climate Dynamics, 56(3), 1183-1201.

Zeeberg, J.J. & S.L. Forman (2001): Changes in glacier extent on north Novaya Zemlya in the twentieth century. The Holocene, 11 (2): 161–175.

Zemp, M., Hoelzle, M. & W. Haeberli (2009): Six decades of glacier mass-balance observations: a review of the worldwide monitoring network. Annals of Glaciology, 50 (50): 101–111.

Zemp, M., Thibert, E., Huss, M., Stumm, D., Rolstad Denby, C., Nuth, C., Nussbaumer, S.U., Moholdt, G., Mercer, A., Mayer, C., Joerg, P.C., Jansson, P., Hynek, B., Fischer, A., Escher-Vetter, H., Elvehøy, H. & L.M. Andreassen (2013): Reanalysing glacier mass balance measurement series. The Cryosphere, 7 (4): 1227–1245.

Zemp, M., Frey, H., Gärtner-Roer, I., Nussbaumer, S.U., Hoelzle, M., Paul, F., Haeberli, W., Denzinger, F., Ahlstroem, A.P., Anderson, B., Bajracharya, S., Baroni, C., Braun, L.N., Caceres, B.E., Casassa, G., Cobos, G., Davila, L.R., Delgado Granados, H., Demuth, M.N., Espizua, L., Fischer, A., Fujita, K., Gadek, B., Ghazanfar, A., Hagen, J.O., Holmlund, P., Karimi, N., Li, Z., Pelto, M., Pitte, P., Popovnin, V.V., Portocarrero, C.A., Prinz, R., Sangewar, C.V., Severskiy, I., Sigurdsson, O., Soruco, A., Usubaliev, R. & C. Vincent (2015): Historically unprecedented global glacier decline in the early 21st century. Journal of Glaciology, 61 (228): 745–762.

Zemp, M., Huss, M., Thibert, E., Eckert, N., McNabb, R., Huber, J., Barandun, M., Machguth, H., Nussbaumer, S.U., Gärtner-Roer, I., Thomson, L., Paul, F., Maussion, F., Kutuzov, S. & J.G. Cogley (2019): Global glacier mass changes and their contributions to sea-level rise from 1961 to 2016. Nature, 568 (7752): 382–386.

Zemp, M., Huss, M., Eckert, N., Thibert, E., Paul, F., Nussbaumer, S.U. & I. Gärtner-Roer (2020): Brief communication: Ad hoc estimation of glacier contributions to sea-level rise from latest glaciological observations. The Cryosphere, 14: 1043–1050.

Zheng, W., Pritchard, M.E., Willis, M.J., Tepes, P., Gourmelen, N., Benham, T.J., & J.A. Dowdeswell (2018): Accelerating glacier mass loss on Franz Josef Land, Russian Arctic. Remote Sensing of Environment, 211, 357-375. https://doi.org/10.1016/j.rse.2018.04.004

7 PRINCIPAL INVESTIGATORS

7.1 PRINCIPAL INVESTIGATORS MASS BALANCE

(in alphabetic order, for observation periods 2017/18, 2018/19, and 2019/20 (for ‘reference‘ glaciers))

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8 SPONSORING AGENCIES

Abbreviation	Sponsoring Agency
ACINN:	Institute of Atmospheric and Cryospheric Sciences (formerly: Institute of Meteorology and Geophysics, IMGI), University of Innsbruck (AT)
ADU:	Adam Mickiewicz University (PL)
AEGL/ANA:	Area de Evaluación de Glaciares y Lagunas, Autoridad Nacional del Agua (PE)
AM:	Association Moraine (FR)
ARC:	Antarctic Research Centre, Victoria University of Wellington (NZ)
ARPA:	Agenzia Regionale per la Protezione dell'Ambiente della Valle d'Aosta (IT)
BCHydro:	B.C. Hydro - Power Smart (CA)
BC-Parks:	BC Parks Living Lab (CA)
BE-Forest:	Forestry Service of Canton Bern (CH)
CAI:	Italian Alpine Club (IT)
CAIAG:	Central Asian Institute of Applied Geosciences (KG)
CAREERI:	Cold and Arid Regions Environment and Engineering Research Institute, Chinese Academy of Sciences (CN)
CAS/ITPR:	Institute of Tibetan Plateau Research, Chinese Academy of Sciences (CN)
CBT:	Columbia Basin Trust (CA)
CGI:	Comitato Glaciologico Italiano (IT)
CNR:	Instituto di Ricerca per la Protezione, Consiglio Nazionale delle Ricerche (IT)
CNRS TheMA:	Laboratoire ThéMA, CNRS & Université de Franche-Comté et de Bourgogne (FR)
CNRS:	Centre national de la recherche scientifique (FR)
CNRS-UGA:	Centre national de la recherche scientifique, Université Grenoble Alpes (FR)
CNSAS:	Corpo Nazionale Soccorso Alpino e Speleologico (IT)
CRG:	Center for Research of Glaciers, Academy of Sciences of the Republic of Tajikistan (TJ)
DES/UU:	Department of Earth Sciences, Uppsala University (SE)
DESA:	Department of Earth Science, Aarhus University (DK)
DGA:	Dirección General de Aguas, Ministerio de Obras Públicas, Gobierno de Chile (CL)
DGP/QU:	Department of Geography and Planning, Queen's University (CA)
DGUF:	Department of Geosciences, University of Fribourg (CH)
DGUO-NZ:	Department of Geography/Te Ihowhenua, University of Otago (NZ)
DHAS:	Department of Hydrospheric-Athmospheric Sciences, Graduate School of Environmental Studies, Nagoya University (JP)
EnergieAG:	Energie AG (AT)
FGUA:	Federal Government of Upper Austria (AT)
FMI:	Finnish Meteorological Institute (FI)
GEM-CB:	Greenland Ecosystem Monitoring - Climate Basis (GL)
GGBAS:	Geodesy and Glaciology, Bavarian Academy of Sciences (DE)
GIUZ:	Department of Geography, University of Zurich (CH)
GL-Forest:	Forestry Service of Canton Glarus (CH)
GR-Forest:	Forestry Service of Canton Graubünden (CH)
GTF:	Gobierno de Tierra del Fuego (AR)
HD/GFKU:	Hydrometeorology Department, Geoscience Faculty of Kabul University (AF)

Abbreviation	Sponsoring Agency
HD/LT:	Hydrologischer Dienst, Land Tirol (AT)
HD/SB:	Hydrografischer Dienst, Land Salzburg (AT)
HVL:	Department of Environmental Sciences, Western Norway University of Applied Sciences (NO)
IAA-DG:	Departamento de Glaciología, Instituto Antártico Argentino (AR)
IAA-UNC:	Instituto Antártico Argentino Convenio DNA, Facultad de Ciencias Exactas Físicas y Naturales, Universidad Nacional de Córdoba (AR)
IANIGLA:	Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales, CCT CONICET Mendoza (AR)
ICIMOD:	International Centre for Integrated Mountain Development (NP)
IDEAM:	Instituto de Hidrología, Meteorología y Estudios Ambientales, Subdirección de Ecosistemas e Información Ambiental (CO)
IES:	Institute of Earth Sciences, University of Iceland (IS)
IGE:	Institut des Géosciences de l'Environnement (formerly: Laboratoire de Glaciologie et Géophysique de l'Environnement, LGGE), CNRS & Université Joseph Fourier Grenoble (FR)
IGNANKaz:	Institute of Geography, National Academy of Sciences of the Kazakh Republic (KZ)
IGRAN:	Institute of Geography of the Siberian Branch, Russian Academy of Science (RU)
IGS:	Iceland Glaciological Survey, National Energy Authority (IS)
IGS-IMO:	Iceland Glaciological Society, Icelandic Meteorological Office (IS)
IMO:	Icelandic Meteorological Office (IS)
INAMHI:	Programa Glaciares Ecuador, Instituto Nacional de Meteorología e Hidrología (EC)
INRAE:	Institut national de recherche pour l'agriculture, l' alimentation et l' environnement (FR)
IRSTEA:	Institut national de recherche en sciences et technologies pour l'environnement et l'agriculture (FR)
JIRP:	Juneau Icefield Research Project, Nicols College (US)
JNU/SES:	School of Environmental Sciences, Jawaharlal Nehru University (IN)
KyrgyzHydromet:	Agency for Hydrometeorology, Ministry of Emergency Situations (KG)
MeteoTrentino:	Meteo Trentino (IT)
MSU:	Geographical Faculty, Moscow State University (RU)
NCGCP:	North Cascade Glacier Climate Project, Nichols College (US)
NCHM:	National Center for Hydrology and Meteorology, Royal Government of Bhutan (BT)
NCPOR:	National Center for Polar and Ocean Research, Ministry of Earth Sciences, Government of India (IN)
NERSC:	Nansen Environmental and Remote Sensing Center (NO)
NPC:	National Power Company (IS)
NPI:	Norwegian Polar Institute, Polar Environmental Centre (NO)
NRCan:	Natural Resources Canada, Geological Survey of Canada (CA)
NVE:	Norwegian Water Resources and Energy Directorate (NO)
ÖAV:	Österreichischer Alpenverein (AT)
OW-Forest:	Forestry Service Canton Obwalden (CH)
PAS:	Institute of Geophysics, Polish Academy of Sciences (PL)
PC:	Parks Canada (CA)
PNGP:	Parco Nazionale Gran Paradiso (IT)
PRC/FESSM:	Polar Research Center, Faculty of Earth Sciences and Spatial Management (PL)
RAS/IG:	Institute of Geography, Russian Academy of Sciences (RU)

Abbreviation	Sponsoring Agency
RFBR:	Russian Foundation of Basic Research (RFBR-18-05-00420) (RU)
SAT:	Comitato Glaciologico Trentino, Società degli Alpinisti Tridentini (IT)
SGAA:	Servizio Glaciologico Alto Adige (IT)
SG-Forest:	Forestry Service of Canton St. Gallen (CH)
SGL:	Servizio Glaciologico Lombardo (IT)
SITES:	Swedish Infrastructure for Ecosystem Science (SE)
SMI:	Società Meteorologica Italiana (IT)
SU/INK:	Department of Physical Geography and Quaternary Geology, University of Stockholm (SE)
SU/NG:	Department of Physical Geography, University of Stockholm (SE)
TI-Forest:	Forestry Service of Canton Ticino (CH)
TshMRC:	The Tien-Shan High Mountain Research Center, Institute of Water Problems and Hydro Power (KG)
TSU/DG:	Department of Geography, Tomsk State University (RU)
TSU/IG:	Institute of Geography, Tbilisi State University (GE)
UACH:	Instituto de Ciencias Físicas y Matemáticas, Facultad de Ciencias, Universidad Austral de Chile (CL)
UCant/DG:	Department of Geography, University of Canterbury (NZ)
UG/GRS:	Institute of Geography and Regional Science, University of Graz (AT)
UG/IRD:	Institute of Environmental Geosciences, CNRS, IRD, Grenoble-INP, Université Grenoble Alpes (FR)
UI/HA:	Ufficio Idrografico / Hydrographisches Amt, Provincia autonoma di Bolzano - Alto Adige / Autonome Provinz Bozen - Südtirol (IT)
UMSA:	Instituto de Investigaciones Geológicas y del Medio Ambiente, Universidad Mayor de San Andres (BO)
UNTDF:	Universidad Nacional de Tierra del Fuego (AR)
UNIPD/TeSAF:	Department of Land, Environment, Agriculture and Forestry, University of Padua (IT)
UPe:	University of Perugia (IT)
UPM/ETSIT:	ETSI Telecomunicación, Universidad Politécnica de Madrid (ES)
UPV:	Departamento de Ingeniería del Terreno, Universidad Politécnica de Valencia (ES)
UR-Forest:	Forestry Service of Canton Uri (CH)
US/IES:	Institute of Earth Sciences, University of Silesia in Katowice (PL)
USGS-F:	Alaska Science Center, Glaciology, U.S. Geological Survey (US)
USGS-GNP:	United States Geological Survey Glacier National Park (US)
USGS-T:	Washington Water Science Center, U.S. Geological Survey (US)
VAW:	Laboratory of Hydraulics, Hydrology and Glaciology, ETH Zurich (CH)
VD-Forest:	Forestry Service of Canton Vaud (CH)
VS-Forest:	Forestry Service of Canton Valais (CH)
WIHG:	Wadia Institute of Himalayan Geology (IN)
ZAMG:	Zentralanstalt für Meteorologie und Geodynamik (AT)

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APPENDIX

The Appendix includes the data reported for the observation periods covered by the current Bulletin (i.e. 2017/18 and 2018/19).

It starts with explanatory notes on the completion of the Excel-based data submission forms, as sent out with the corresponding calls-for-data:

NOTES ON THE COMPLETION OF THE DATA SHEETS

- Notes on the completion of the data sheet “A GENERAL INFORMATION”
- Notes on the completion of the data sheet “AA GLACIER ID LOOKUP TABLE”
- Notes on the completion of the data sheet “B STATE”
- Notes on the completion of the data sheet “C FRONT VARIATION”
- Notes on the completion of the data sheet “D CHANGE”
- Notes on the completion of the data sheet “E MASS BALANCE OVERVIEW”
- Notes on the completion of the data sheet “EE MASS BALANCE”
- Notes on the completion of the data sheet “EEE MASS BALANCE POINT”
- Notes on the completion of the data sheet “F SPECIAL EVENT”

The notes on the completion of the data sheets A–F describe all attributes compiled during the call-for-data, whereas the Tables 1 to 6 in this bulletin provide a summary of the collected data. Full details, including all attributes as well as reported special events, are stored in, and available from, the *Fluctuations of Glaciers* (FoG) database.

The WGMS website provides access to information on available data, to procedures for data order and data submission as well as to the addresses of National Correspondents. Website and database can be accessed via:

https://www.wgms.ch

A - GENERAL INFORMATION

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in cases of new glacier entries related to available fluctuation data[#]; for glaciers already existing in the FoG database, POLITICAL UNIT (A1), GLACIER NAME (A2) AND WGMS ID (A3) are to be used in data sheets B to F.

A1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (for 2 digit abbreviations, see ISO 3166 country code, available at www.iso.org).
Political unit is part of WGI key (positions 1 and 2).
Political unit is part of PSFG key (positions 1 and 2).

A2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters.
Format: max. 60 column positions.
If necessary, the name can be abbreviated; in this case, please give the full name under "A16 - REMARKS".

A3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS.
For new glacier entries, this key is assigned by the WGMS.

A4 - GEOGRAPHICAL LOCATION (GENERAL) [alpha-numeric code; up to 30 digits]
Refers to a large geographical entity (e.g. a large mountain range or large politcal subdivision) which gives a rough idea of the location of the glacier, without requiring the use of a map or an atlas. Examples: Western Alps, Southern Norway, Polar Ural, Tien Shan, Himalayas.

A5 - GEOGRAPHICAL LOCATION (SPECIFIC) [alpha-numeric code; up to 30 digits]
Refers to a more specific geographical location (e.g. mountain group, drainage basin), which can be found easily on a small scale map of the country concerned. Examples: Rhone Basin, Jotunheimen.

A6 - LATITUDE [decimal degree North or South; up to 6 digits]
The geographical coordinates should refer to a point in the upper ablation area; for small glaciers, this point may lie outside the glacier.
Latitude should be given in decimal degrees, positive values indicating the northern hemisphere and negative values indicating the southern hemisphere.
Latitude should be given to a maximum precision of 4 decimal places.

A7 - LONGITUDE [decimal degree East or West; up to 7 digits]
The geographical coordinates should refer to a point in the upper ablation area; for small glaciers, this point may lie outside the glacier.
Longitude should be given in decimal degrees, positive values indicating east of zero meridian and negative values indicating west of zero meridian.
Longitude should be given to a maximum precision of 4 decimal places.

A8 - CODE [numeric code; 3 digits]
Classification should be given in coded form, according to "Perennial Ice and Snow Masses" (Technical papers in hydrology, UNESCO/IAHS, 1970). The following information should be given:

- Primary Classification — Digit 1
- Form — Digit 2
- Frontal Characteristics — Digit 3

[#] For new glacier entries, you may check the World Glacier Inventory (WGI) or the GLIMS database for existing information:
+ WGI: https://nsidc.org/data/glacier_inventory/index.html
+ GLIMS: https://www.glims.org

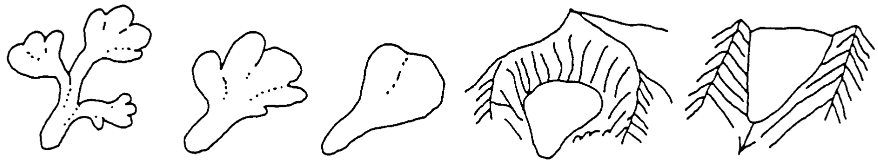
A8a - PRIMARY CLASSIFICATION - Digit 1

0	Miscellaneous	Any type not listed below (please explain)
1	Continental ice sheet	Inundates areas of continental size
2	Icefield	Ice masses of sheet or blanket type of a thickness insufficient to obscure the subsurface topography
3	Ice cap	Dome-shaped ice masses with radial flow
4	Outlet glacier	Drains an ice sheet, icefield or ice cap, usually of valley glacier form; the catchment area may not be easily defined
5	Valley glacier	Flows down a valley; the catchment area is well defined
6	Mountain glacier	Cirque, niche or crater type, hanging glacier; includes ice aprons and groups of small units
7	Glacieret and snowfield	Small ice masses of indefinite shape in hollows, river beds and on protected slopes, which has developed from snow drifting, avalanching, and/or particularly heavy accumulation in certain years; usually no marked flow pattern is visible; in existence for at least two consecutive years.
8	Ice shelf	Floating ice sheet of considerable thickness attached to a coast nourished by a glacier(s); snow accumulation on its surface or bottom freezing
9	Rock glacier	Lava-stream-like debris mass containing ice in several possible forms and moving slowly downslope

Note: The parent glacier concept (cf. A15 - PARENT GLACIER) can be used for the classification of complex glacier systems (e.g., ice cap or icefield with outlet glaciers) or of disintegrating/coalescing glaciers over time.

A8b - FORM – Digit 2

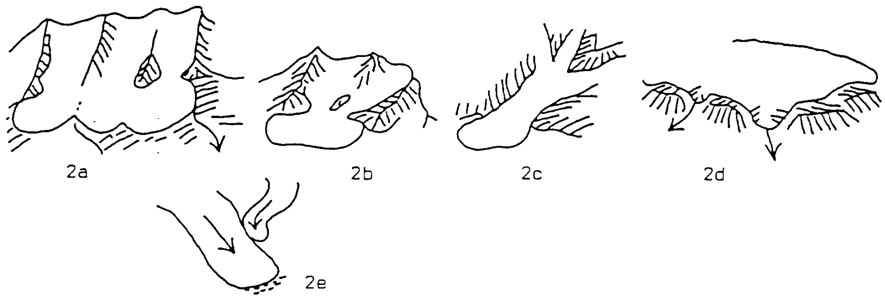
0	Miscellaneous	Any type not listed below (please explain)
1	Compound basins	Two or more individual valley glaciers issuing from tributary valleys and coalescing (Fig. 1a)
2	Compound basin	Two or more individual accumulation basins feeding one glacier system (Fig. 1b)
3	Simple basin	Single accumulation area (Fig. 1c)
4	Cirque	Occupies a separate, rounded , steep-walled recess which it has formed on a mountain side (Fig. 1d)
5	Niche	Small glacier in a V-shaped gulley or depression on a mountain slope (Fig. 1e); generally more common than genetically further-developed cirque glacier.
6	Crater	Occurring in extinct or dormant volcanic craters
7	Ice apron	Irregular, usually thin ice mass which adheres to mountain slope or ridge
8	Group	A number of similar ice masses in close proximity and too small to be assessed individually
9	Remnant	Inactive, usually small ice masses left by a receding glacier



1a 1b 1c 1d 1e

A8c - FRONTAL CHARACTERISTICS – Digit 3

0	Miscellaneous	Any type not listed below (please explain)
1	Piedmont	Icefield formed on a lowland area by lateral expansion of one or coalescence of several glaciers (Fig. 2a, 2b)
2	Expanded foot	Lobe or fan formed where the lower portion of the glacier leaves the confining wall of a valley and extends on to a less restricted and more level surface (Fig. 2c)
3	Lobed	Part of an ice sheet or ice cap, disqualified as an outlet glacier (Fig. 2d)
4	Calving	Terminus of a glacier sufficiently extending into sea or lake water to produce icebergs; includes - for this inventory - dry land ice calving which would be recognisable from the “lowest glacier elevation”
5	Coalescing, non-contributing (Fig. 2e)	
6	Irregular, mainly clean ice (mountain or valley glaciers)	
7	Irregular, debris-covered (mountain or valley glaciers)	
8	Single lobe, mainly clean ice (mountain or valley glaciers)	
9	Single lobe, debris-covered (mountain or valley glaciers)	



A9 - EXPOSITION OF ACCUMULATION AREA [cardinal point; up to 2 digits]
The main orientation of the accumulation area using the 8 cardinal points (8-point compass).

A10 - EXPOSITION OF ABLATION AREA [cardinal point; up to 2 digits]
The main orientation of the accumulation area using the 8 cardinal points (8-point compass).

A11 - PARENT GLACIER [numeric code; 5 digits]
Links separated glacier parts with (former) parent glacier, using WGMS ID (see "A3 - WGMS ID").

A12 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here. Comments about the uncertainty of the numerical data may be made, including quantative comments. Only significant decimals should be given.

A13 - GLACIER REGION [alphabetic code; 3 digits]
3-digit code assigning each glacier to one of 19 first-order regions (cf. GTN-G 2017, https://dx.doi.org/10.5904/gtng-glacreg-2017-07). For new glacier entries, this key is assigned by the WGMS.

A14 - GLACIER SUBREGION [alpha-numeric code; 6 digits]
6-digit code assigning each glacier to one of >90 second-order regions (cf. GTN-G 2017, https://dx.doi.org/10.5904/gtng-glacreg-2017-07). For new glacier entries, this key is assigned by the WGMS.

AA - GLACIER ID LOOKUP TABLE

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet is completed by the WGMS and aims at linking the WGMS_ID as used in the FoG database to glacier identifiers in other databases, such as to the PSFG_ID, the WGI_ID, the GLIMS_ID, and the RGI_ID.

AA1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. "A1 - POLITICAL UNIT").

AA2 - GLACIER NAME [alpha-numeric code; up to 30 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A2 - GLACIER NAME".

AA3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. "A3 – WGMS ID"). This key is assigned by the WGMS.

AA4 - PSFG ID [alpha-numeric code; 7 digits]
7 digit key identifying glaciers in the FoG publication series. The key was introduced by the "Permanent Service for the Fluctuations of Glaciers" (PSFG), one of the predecessor services of the WGMS. This key is assigned by the National Correspondents according to existing national glacier inventories or similar glacier numerations.

The PSFG ID consists of 7 digits, starting with 2-character political unit followed by 4 or, as an exception, 5 alpha-numerical digits. Empty spaces are filled with the digit 0.

AA5 - WGI ID [alpha-numeric code; 12 digits]
12 digit key identifying glaciers in the World Glacier Inventory. The key is assigned to the glaciers as defined by Müller (1978) combining the five following elements:
+ 2-character political unit
+ 1-digit continent code
+ 4-character drainage code
+ 2-digit free position code
+ 3-digit local glacier code

Empty spaces are filled with the digit 0. This key is assigned by WGMS and NSIDC. More information is found in Müller (1978) and on the WGI webpage: https://www.gtn-g.ch/data_catalogue_wgi/

AA6 - GLIMS ID [alpha-numeric code; 14 digits]
14 digit key identifying glaciers in the GLIMS database. The identifier has the format GxxxxxxEyyyyyΘ, where xxxxxx is longitude east of the Greenwich meridian in millidegrees, yyyyy is north or south latitude in millidegrees, and Θ is N or S depending on the hemisphere. This key is assigned by NSIDC. More information is found on the GLIMS webpage: https://www.glims.org/MapsAndDocs/

AA7 - RGI ID [alpha-numeric code; 14 digits]
14 digit key identifying glaciers in the RGI database. The identifier has the format RGIvv-rr.nnnnn, where vv is the version number, rr is the first-order region number and nnnnn is an arbitrary identifying code that is unique with in the region. These codes were assigned as sequential positive integers at the first-order (not second-order) level, but they should not be assumed to be sequential numbers, or even to be numbers. In general the identifying code of each glacier, nnnnn, should not be expected to be the same in different RGI versions. This key is assigned by the RGI Working Group. More information is found on the RGI webpage: https://www.glims.org/RGI/index.html

AA8 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here.

B - STATE

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in order to report length, area and elevation range of glaciers with available fluctuation data.

B1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. “A1 - POLITICAL UNIT”).

B2 - GLACIER NAME [alpha-numeric code; up to 30 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in
“A2 - GLACIER NAME”.

B3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. “A3 – WGMS ID”).

B4 - YEAR [year]
Year of present survey.

B5 - MAXIMUM ELEVATION OF GLACIER [m a.s.l.]
Altitude of the highest point of the glacier.

B6 - MEDIAN ELEVATION OF GLACIER [m a.s.l.]
Altitude of the contour line which halves the area of the glacier.

B7 - MINIMUM ELEVATION OF GLACIER [m a.s.l.]
Altitude of the lowest point of the glacier.

B8 - ELEVATION UNCERTAINTY [m]
Estimated random uncertainty of reported elevations.

B9 - LENGTH [km]
Maximum length of glacier measured along the most important flowline (in horizontal projection).

B10 - LENGTH UNCERTAINTY [km]
Estimated random uncertainty of reported length.

B11 - AREA [km^2]
Glacier area (in horizontal projection) in the survey YEAR.

B12 - AREA UNCERTAINTY [km^2]
Estimated random uncertainty of reported area.

B13 - SURVEY DATE [numeric; 8 digits]
Date of present survey.
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “B16 - REMARKS”.

B14 - SURVEY PLATFORM & METHOD [alphabetic code; 2 digits]
The survey platform and method should be given using the following alphabetic code:

Platform (first digit, lower case)	Method (second digit, upper case)
t: terrestrial	R: reconstructed (e.g., from landforms)
a: airborne	M: derived from maps
s: spaceborne	G: ground survey (e.g., GPS, tachymetry, tape)
c: combined	P: photogrammetry
x: unknown	L: laser altimetry or scanning
	Z: radar altimetry or interferometry
	C: combined (explain under B16 REMARKS)
	X: other (explain under B16 REMARKS)

B15 - INVESTIGATOR [alpha-numeric; 255 digits]
Name(s) of the person(s) or agency doing the field work and/or the name(s) of the person(s) or agency processing the data.

B16 - SPONSORING AGENCY [alpha-numeric; 255 digits]
Full name, abbreviation and address of the agency where the data are held.

B17 - REFERENCE [alpha-numeric; 255 digits]
Reference to publication related to above data and methods.
Use short format such as: Author et al. (YYYY); Journal, V(I), X-XX p.

B18 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here as well as short references to related publications. Comments about the uncertainty of the numerical data may be made, including quantative comments. Only significant decimals should be given.

C - FRONT VARIATION

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in order to report glacier length change records mainly from in-situ and remote sensing measurements.*

C1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which the glacier is located (cf. “A1 - POLITICAL UNIT”).

C2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A2 - GLACIER NAME”.

C3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. “A3 – WGMS ID”).

C4 - YEAR [year]
Year of present survey.

C5 - FRONT VARIATION [m]
Variation in the position of the glacier front (in horizontal projection) between the previous and present survey.

Positive values: advance
Negative values: retreat

C6 - FRONT VARIATION UNCERTAINTY [m]
Estimated random uncertainty of reported front variation.

C7 - QUALITATIVE VARIATION [alphabetic code; 2 digits]
If no quantitative data are available for a particular year, but qualitative data are available, then the front variation should be denoted using the following symbols. They should be positioned in the far left of the data field.

+X : Glacier in advance
-X : Glacier in retreat
ST : Glacier stationary
SN : Glacier front covered by snow making survey impossible.

Qualitative variations will be understood with reference to the previous survey data, whether this data is qualitative or quantitative.

C8 - SURVEY DATE [numeric; 8 digits]
Date of present survey.
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “C14 - REMARKS”.

C9 - SURVEY PLATFORM & METHOD [alphabetic code; 2 digits]
The survey platform and method should be given using the following alphabetic code:

Platform (first digit, lower case)	Method (second digit, upper case)
t: terrestrial	R: reconstructed (e.g., historical sources, geomorphological evidence, dating of moraines)
a: airborne	M: derived from maps
s: spaceborne	G: ground survey (e.g., GPS, tachymetry, tape)
c: combined	P: photogrammetry
x: unknown	L: laser altimetry or scanning
	Z: radar altimetry or interferometry
	C: combined (explain under C14 REMARKS)
	X: other (explain under C14 REMARKS)

* For the submission of front variation series mainly based on reconstruction methods (e.g., paintings, drawings, written sources, photography, maps, and moraine dating), please contact the WGMS staff.

C10 - REFERENCE DATE [numeric, 8 digits]
Date of previous survey
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “C14 - REMARKS”.

C11 - INVESTIGATOR [alpha-numeric; 255 digits]
Name(s) of the person(s) or agency doing the fieldwork and/or the name(s) of the person(s) or agency processing the data.

C12 - SPONSORING AGENCY [alpha-numeric; 255 digits]
Full name, abbreviation and address of the agency where the data are held.

C13 - REFERENCE [alpha-numeric; 255 digits]
Reference to publication related to above data and methods.
Use short format such as: Author et al. (YYYY); Journal, V(I), X-XX p.

C14 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here as well as short references to related publications. Comments about the uncertainty of the numerical data may be made, including quantative comments. Only significant decimals should be given.

D - CHANGE

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in order to report changes in thickness, area and volume from geodetic surveys and/or area data of glaciers with available fluctuation data.

D1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. “A1 - POLITICAL UNIT”).

D2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A2 - GLACIER NAME”.

D3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. “A3 – WGMS ID”).

D4 - SURVEY ID [numeric code]
Numeric key identifying data records related to a specific glacier survey in the FoG database of the WGMS. This key is assigned by the WGMS in order to distinguish results from different surveys (and sources) for the same glacier and survey period.

D5 - YEAR [year]
Year of present survey.

D6 - LOWER BOUNDARY [m a.s.l.]
Lower boundary of altitude interval.
If refers to entire glacier, then lower bound = 9999.

D7 - UPPER BOUNDARY [m a.s.l.]
Upper boundary of altitude interval.
If refers to entire glacier, then upper bound = 9999.

D8 - AREA SURVEY YEAR [km^2]
Glacier area of each altitude interval (in horizontal projection) in the survey YEAR.

D9 - AREA CHANGE [1000 m^2]
Area change for each altitude interval.

D10 - AREA CHANGE UNCERTAINTY [1000 m^2]
Estimated random uncertainty of reported area change.

D11 - THICKNESS CHANGE [mm]
Specific ice thickness change for each altitude interval.

D12 - THICKNESS CHANGE UNCERTAINTY [mm]
Estimated random uncertainty of reported thickness change.

D13 - VOLUME CHANGE [1000 m^3]
Ice volume change for each altitude interval.

D14 - VOLUME CHANGE UNCERTAINTY [1000 m^3]
Estimated random uncertainty of reported volume change.

D15 - SURVEY DATE [numeric; 8 digits]
Date of present survey.
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “D22 - REMARKS”.

D16 - SURVEY DATE PLATFORM & METHOD [alphabetic code; 2 digits]
The survey platform and method applied at the survey date should be given using the following alphabetic code:

Platform (first digit, lower case)	Method (second digit, upper case)
t: terrestrial	R: reconstructed (e.g., from landforms)
a: airborne	M: derived from maps
s: spaceborne	G: ground survey (e.g., GPS, tachymetry, tape)
c: combined	P: photogrammetry
x: unknown	L: laser altimetry or scanning
	Z: radar altimetry or interferometry
	C: combined (explain under D22 REMARKS)
	X: other (explain under D22 REMARKS)

D17 - REFERENCE DATE [numeric; 8 digits]
Date of previous survey.
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put "99" in the corresponding position(s) and make a note under "D22 - REMARKS".

D18 - REFERENCE DATE PLATFORM & METHOD [alphabetic code; 2 digits]
The survey platform and method applied at the reference date should be given using the alphabetic code given under D16.

D19 - INVESTIGATOR [alpha-numeric; 255 digits]
Name(s) of the person(s) or agency doing the fieldwork and/or the name(s) of the person(s) or agency processing the data.

D20 - SPONSORING AGENCY [alpha-numeric; 255 digits]
Full name, abbreviation and address of the agency where the data are held.

D21 - REFERENCE [alpha-numeric; 255 digits]
Reference to publication related to above data and methods.
Use short format such as: Author et al. (YYYY); Journal, V(I), X-XX p.

D22 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here as well as short references to related publications. Comments about the uncertainty of the numerical data may be made, including quantative comments. Only significant decimals should be given.

E - MASS BALANCE OVERVIEW

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in order to report glacier mass balance data measured by the direct glaciological method.

E1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. “A1 - POLITICAL UNIT”).

E2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in
“A2 - GLACIER NAME”.

E3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. “A3 – WGMS ID”).

E4 - YEAR [year]
Year of present survey.

E5 - TIME MEASUREMENT SYSTEM [alphabetic code; 3 digits]
The time measurement system should be given using the following 3 digit alphabetic code:

FLO	= floating-date system
FXD	= fixed-data system
STR	= stratigraphic system
COM	= combined system; usually of STR and FXD according Mayo et al. (1972)
OTH	= other

Please give floating survey dates in E6-E8 for all time systems and explain methodological details (e.g., fixed calendar dates and correction methods) under “E23 - REMARKS”.

Note that FLO was newly introduced in 2011 in order to reduce earlier ambiguities. Before that, mass balance results based on the floating-date system were (at least theoretically) reported as OTH. For definitions of the above time measurement systems and more details see Cogley et al. (2011).

E6 - BEGINNING OF SURVEY PERIOD [numeric; 8 digits]
Date on which survey period began.
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “E23 - REMARKS”.

E7 - END OF WINTER SEASON [numeric; 8 digits]
Date of end of winter season.
If known, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “E23 - REMARKS”.

E8 - END OF SURVEY PERIOD [numeric; 8 digits]
Date on which survey period ended.
For each survey, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “E23 - REMARKS”.

E9a - ELA PREFIX [alphabetic code, 1 digit]
Prefix denoting if the equilibrium line was below (“<”) or above (“>”) the minimum or maximum elevation of the glacier, respectively. Leave this field empty if the mean altitude of the equilibrium line was within the glacier elevation range.

E9b - EQUILIBRIUM LINE ALTITUDE [m a.s.l.]
Mean alititude (averaged over the glacier) of the end-of-mass-balance-year equilibrium line (ELA). Give glacier minimum or maximum elevation if the ELA was below or above the elevation range of the glacier, respectively.

E10 - ELA UNCERTAINTY [m]
Estimated random uncertainty of reported ELA.

E11 - MINIMUM NUMBER OF MEAS. SITES USED IN ACCUMULATION AREA [numeric]
The minimum number of different sites at which measurements were taken in the accumulation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once. Minimum and maximum values can be used to indicate different numbers of measurements carried out for (i) winter and annual balance surveys or (ii) for different accumulation measurement types (e.g., snow pits versus snow probings).

E12 - MAXIMUM NUMBER OF MEAS. SITES USED IN ACCUMULATION AREA [numeric]
The maximum number of different sites at which measurements were taken in the accumulation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once. Minimum and maximum values can be used to indicate different numbers of measurements carried out for (i) winter and annual balance surveys or (ii) for different accumulation measurement types (e.g., snow pits versus snow probings).

E13 - MINIMUM NUMBER OF MEAS. SITES USED IN ABLATION AREA [numeric]
The minimum number of different sites at which measurements were taken in the ablation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once. Minimum and maximum values can be used to indicate different numbers of measurements carried out for (i) winter and annual balance surveys.

E14 - MAXIMUM NUMBER OF MEAS. SITES USED IN ABLATION AREA [numeric]
The maximum number of different sites at which measurements were taken in the ablation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once. Minimum and maximum values can be used to indicate different numbers of measurements carried out for (i) winter and annual balance surveys.

E15 - ACCUMULATION AREA [km^2]
Accumulation area in horizontal projection.

E16 - ACCUMULATION AREA UNCERTAINTY [km^2]
Estimated random uncertainty of reported accumulation area.

E17 - ABLATION AREA [km^2]
Ablation area in horizontal projection.

E18 - ABLATION AREA UNCERTAINTY [km^2]
Estimated random uncertainty of reported ablation area.

E19 - ACCUMULATION AREA RATIO [%]
Accumulation area divided by the total area, multiplied by 100. Given in percent.

E20 - INVESTIGATOR [alpha-numeric; 255 digits]
Name(s) of the person(s) or agency doing the fieldwork and/or the name(s) of the person(s) or agency processing the data.

E21 - SPONSORING AGENCY [alpha-numeric; 255 digits]
Full name, abbreviation and address of the agency where the data are held.

E22 - REFERENCE [alpha-numeric; 255 digits]
Reference to publication related to above data and methods.
Use short format such as: Author et al. (YYYY); Journal, V(I), X-XX p.

E23 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here as well as short references to related publications. Comments about the uncertainty of the numerical data may be made, including quantative comments. Only significant decimals should be given.

EE - MASS BALANCE

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in order to report glacier mass balance data with values related to the data given in data sheet E.

EE1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. “A1 - POLITICAL UNIT”).

EE2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in
“A2 - GLACIER NAME”.

EE3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. “A3 – WGMS ID”).

EE4 - YEAR [year]
Year of present survey.

EE5 - LOWER BOUNDARY OF ALTITUDE INTERVAL [m a.s.l.]
If refers to entire glacier, then lower bound = 9999.

EE6 - UPPER BOUNDARY OF ALTITUDE INTERVAL [m a.s.l.]
If refers to entire glacier, then lower bound = 9999.

EE7 - ALTITUDE INTERVAL AREA [km^2]
Area of each altitude interval (in horizontal projection).

EE8 - SPECIFIC WINTER BALANCE [mm w.e.]
Specific means the total value divided by the total glacier area under investigation.
Specific winter balance equals the net winter balance divided by the total area of the glacier.

EE9 - SPECIFIC WINTER BALANCE UNCERTAINTY [mm w.e.]
Estimated random uncertainty of reported winter balance.

EE10 - SPECIFIC SUMMER BALANCE [mm w.e.]
Specific means the total value divided by the total glacier area, in this case, it is the net summer balance divided by the total area of the glacier.

EE11 - SPECIFIC SUMMER BALANCE UNCERTAINTY [mm w.e.]
Estimated random uncertainty of reported winter balance.

EE12 - SPECIFIC ANNUAL BALANCE [mm w.e.]
Annual mass balance of glacier divided by the area of the glacier.

EE13 - SPECIFIC ANNUAL BALANCE UNCERTAINTY [mm w.e.]
Estimated random uncertainty of reported annual balance.

EE14 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here. Comments about the uncertainty of the numerical data may be made, including quantitative comments. Only significant decimals should be given.

EEE - MASS BALANCE POINT

NOTES ON THE COMPLETION OF THE DATA SHEET

This data sheet should be completed in order to report point mass balance data. Values related to glacier-wide balances (cf. data sheet EE) need to be denoted in EEE13 BALANCE_CODE.

EEE1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. "A1 - POLITICAL UNIT").

EEE2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A2 - GLACIER NAME".

EEE3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. "A3 – WGMS ID").

EEE4 - YEAR [year]
Year of present survey.

EEE5 - FROM DATE [numeric; 8 digits]
Date on which survey period began. Please indicate the complete date in numeric format YYYYMMDD. Missing data: For unknown day or month, put "99" in the corresponding position(s) and make a note under "E23 - REMARKS"

EEE6 - TO DATE [numeric; 8 digits]
Date on which survey period ended. Please indicate the complete date in numeric format YYYYMMDD. Note: the first four digits of TO DATE correspond to EEE4 YEAR. Missing data: For unknown day or month, put "99" in the corresponding position(s) and make a note under "E23 - REMARKS".

EEE7 - POINT ID [alpha-numeric; 4 digits]
4 digit key indentifying the stake or pit.

EEE8 - POINT LATITUDE [decimal degree North or South; up to 6 digits]
Latitude of stake or pit given in decimal degrees, positive values indicating the northern hemisphere and negative values indicating the southern hemisphere. Latitude should be given to a maximum precision of 4 decimal places.

EEE9 - POINT LONGITUDE [decimal degree East or West; up to 7 digits]
Longitude of stake or pit given in decimal degrees, positive values indicating east of zero meridian and negative values indicating west of zero meridian. Longitude should be given to a maximum precision of 4 decimal places.

EEE10 - POINT ELEVATION [m a.s.l.]
Elevation above sea level of stake or pit.

EEE11 – POINT BALANCE [mm w.e.]
Mass balance at this observation point between FROM DATE and TO DATE.

EEE12 – POINT BALANCE UNCERTAINTY [mm w.e.]
Estimated random uncertainty of reported point balance.

EEE13 – DENSITY [kg m^{-3}]
Measured or assumed density used to convert the height readings (in mm) to point balances (in mm w.e.).

EEE14 – DENSITY UNCERTAINTY [kg m^{-3}]
Estimated random uncertainty of reported density.

EEE15 - BALANCE CODE [alphabetic code; 2 digits]
Code used to denote point balances used for the calculation of glacier-wide balances:
BW = winter balance (cf. data sheet EE8)
BS = summer balance (cf. data sheet EE10)
BA = annual balance (cf. data sheet EE12)
IN = balance at index point not used for glacier-wide balance calculations

EEE16 - REMARKS [alpha-numeric]
Any important information or comments not included above, such as type of point location.

F - SPECIAL EVENT

NOTES ON COMPLETION OF THE DATA SHEET

This data sheet should be completed in cases of extraordinary events, especially concerning glacier hazards and dramatic changes in glaciers.

F1 - POLITCAL UNIT [alphabetic code; 2 digits]
Name of country or territory in which glacier is located (cf. “A1 - POLITICAL UNIT”).

F2 - GLACIER NAME [alpha-numeric code; up to 60 digits]
The name of the glacier, written in CAPITAL letters. Use the same spelling as in “A2 - GLACIER NAME”.

F3 - WGMS ID [numeric code; 5 digits]
5 digit key identifying glaciers in the FoG database of the WGMS (cf. “A3 – WGMS ID”).

F4 - EVENT ID [numeric code]
Numeric key identifying special event in the FoG database of the WGMS. This key is assigned by the WGMS in order to distinguish different events reported for the same glacier and event date (e.g. in the case of unknown event date: “99999999”).

F5 - EVENT DATE [numeric; 8 digits]
Date of event. For each event, please indicate the complete date in numeric format (YYYYMMDD).
Missing data: For unknown day or month, put “99” in the corresponding position(s) and make a note under “F7 - EVENT DESCRIPTION”. For events lasting for several days, please indicate the date of the main event, and describe the sequence of the event under “F7 - EVENT DESCRIPTION”.

F6 - EVENT TYPE [binary code; 6 digits]
Indicate the involved event type(s) using 1 = event type involved and 0 = event type not involved for the following event types:

F6a - GLACIER SURGE
F6b - CALVING INSTABILITY
F6c - GLACIER FLOOD (including debris flow, mudflow)
F6d - ICE AVALANCHE
F6e - TECTONIC EVENT (earthquake, volcanic eruption)
F6f - OTHER

F7 - EVENT DESCRIPTION [alpha-numeric]
Please give quantitative information wherever possible, for example:
- Glacier surge: Date and location of onset, duration, flow or advance velocities, discharge anomalies and periodicity;
- Calving instability: Rate of retreat, iceberg discharge, ice flow velocity and water depth at calving front;
- Glacier flood (including debris flow, mudflow): Outburst volume, outburst mechanism, peak discharge, sediment load, outreach distance, and propagation velocity of flood wave or front of debris flow / mudflow;
- Ice avalanche: Volume released, runout distance, overall slope (ratio of vertical drop height to horizontal travel distance) of avalanche path;
- Tectonic event: Volumes, runout distances and overall slopes (ratio of vertical drop height to horizontal travel distance) of rockslides on glacier surfaces, amount of geothermal melting in craters, etc.

F8 - INVESTIGATOR [alpha-numeric; 255 digits]
Name(s) of the person(s) or agency doing the fieldwork and/or the name(s) of the person(s) or agency processing the data.

F9 - SPONSORING AGENCY [alpha-numeric; 255 digits]
Full name, abbreviation and address of the agency that sponsored the survey and/or where the data are held.

F10 - REFERENCE [alpha-numeric; 255 digits]
Reference to publication related to above data and methods.
Use short format such as: Author et al. (YYYY); Journal, V(I), X-XX p.

F11 - REMARKS [alpha-numeric]
Any important information or comments not included above may be given here. Comments about the uncertainty of the numerical data may be made, including quantative comments. Only significant decimals should be given.

APPENDIX - Table 1

GENERAL INFORMATION ON THE OBSERVED GLACIERS 2018–2019

GLACIER NAME	Name of the glacier in capital letters, up to 30 alpha-numeric digits
WGMS ID	Key identifier of the glacier in the FoG database, assigned by the WGMS, up to 5 numeric digits
PSFG NR	Identifier of the glacier in line with existing national inventories, assinged by the National Correspondents, up to 5 numeric digits with 2 alphabetic digits prefix denoting country (cf. www.iso.org)
REGION	Code for geographical location of the glacier in of 19 macro-scale regions, 3 alphabetic digits
LAT	Latitude in decimal degrees north (positive) or south (negative)
LON	Longitude in decimal degrees east (positive) or west (negative)
CODE	3 digits giving primary classification, form, and frontal characteristics of the glacier (cf. Notes on the Completion of the Data Sheets)
EXP ACC	Exposition of the accumulation area (cardinal point)
EXP ABL	Exposition of the ablation area (cardinal point)
ELEV MAX	Maximum elevation of the glacier in metres above sea level*
ELEV MED	Median elevation of the glacier in metres above sea level*
ELEV MIN	Mininum elevation of the glacier in metres above sea level*
AREA	Total area of the glacier in km^2*
LEN	Total length of the glacier in km*
DATA TYPE	2 = Variations in the positions of glacier fronts reported for 2017/18 and 2018/19
	3 = Mass balance summary data reported for 2017/18 and 2018/19
	4 = Mass balance versus elevation data reported for 2017/18 and 2018/19
	5 = Mass balance point data reported for 2017/18 and 2018/19
	6 = Changes in area, volume and thickness from geodetic surveys

* these are the last reported values which may not correspond to the same survey year

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
AF - Afghanistan														
PIR YAKH	10452		ASW	35.595	70.17	6-3-8	NE	NE	5070		4400	1.7	2.1	---5-
AQ - Antarctica														
BAHIA DEL DIABLO	2665		ANT	-63.82	-57.43	4-3-8	NE	E	630	390	38	12.9	7.6	-3456
HURD	3367		ANT	-62.688	-60.402	4-3-3	W	W	334		4	4		-3--6
JOHNSONS	3366		ANT	-62.669	-60.354	4-2-4	NW	NW	356		0	5.4		-3--6
AR - Argentina														
AGUA NEGRA	4532		SAN	-30.165	-69.809	6-3-8	SE	SE	5208	5015	4750	1	2	-34-6
AZUFRE	2851		SAN	-35.29	-70.55	5-3-8	E	E	3978	3350	3067	2.3	3	-3---
BROWN SUPERIOR	3903		SAN	-29.983	-69.642	6-3-8	E	NE	5115	5060	4965	0.2	0.6	-3--6
CONCONTA NORTE	3902		SAN	-29.976	-69.645	6-3-8	E	E	5125	5050	4950	0.1	0.5	-3--6
DE LOS TRES	1675		SAN	-49.33	-73	5-4-4	SE	SE	1853		1228	0.8	1.5	234-6
LOS AMARILLOS	3904		SAN	-29.296	-69.995	6-3-8	SE	SE	5535	5275	4915	0.8	1.5	-3--6
MARTIAL ESTE	2000		SAN	-54.78	-68.4	6-4-6	SE	SE	1180	1074	960	0.1	0.4	-3456
AT - Austria														
ALPEINER F.	497	AT0307	CEU	47.05	11.13	5-2-8	N	NE	3340	2930	2310	3.9	4.6	2----
BACHFALLEN F.	500	AT0304	CEU	47.08	11.08	6-0-8	N	N	3120	2850	2580	2.5	2.9	2----
BAERENKOPF K.	567	AT0702	CEU	47.14	12.723	6-2-4	N	N	3400	3030	2270	2.5	3.1	2----
BERGLAS F.	496	AT0308	CEU	47.07	11.12	6-0-8	E	NE	3290	2990	2490	1.5	2.5	2----
BIELTAL F.	481	AT0105A	CEU	46.88	10.13	6-0-6	NW	NW	3000	2740	2544	0.7	1.1	2----
BRENNKOGL K.	528	AT0727	CEU	47.1	12.8	6-4-6	N	N	2960	2670	2430	0.6	1.2	2----
DAUNKOGEL F.	604	AT0310A	CEU	47	11.1	6-0-8	NE	NE	3240	2880	2550	2.7	2.9	2----
DIEM F.	513	AT0220	CEU	46.811	10.945	6-0-8	NW	NW	3540	3060	2710	3.5	3.4	2----
EISKAR G.	1632	AT1301	CEU	46.62	12.9	6-4-6	N	N	2390	2250	2160	0.2	0.4	2----
FERNAU F.	601	AT0312	CEU	46.98	11.13	6-4-8	NW	N	3310	2850	2380	2	2.5	2----
FIRMISAN F.	4337		CEU	46.827	10.95	X-X-X	W	W				0.8		2----
FREIWAND K.	564	AT0706	CEU	47.1	12.75	6-4-8	SE	SE	3130	2890	2690	0.3	1.1	2----
FROSNITZ K.	579	AT0507	CEU	47.08	12.4	6-3-6	E	E	3330	2780	2400	4.2	4.4	2----
FURTSCHAGL K.	585	AT0406	CEU	47	11.77	6-0-8	NW	NW	3468	2928	2624	0.9	1.6	2----
GAISKAR F.	530	AT0325	CEU	46.97	11.12	6-4-8	SE	SE	3190	3070	2890	0.8	1.1	2----
GAISSBERG F.	508	AT0225	CEU	46.83	11.07	5-2-8	NW	NW	3390	2850	2460	1.4	3.3	2----
GEPATSCH F.	522	AT0202	CEU	46.85	10.77	5-2-8	NE	N	3536	3057	2060	17.3	8.2	2----
GOESSNITZ K.	532	AT1201	CEU	46.97	12.75	6-4-7	NW	NW	3060	2690	2520	0.9	1.5	2----
GOLDBERG K.	1305	AT0802B	CEU	47.04	12.97	6-4-8	SE	NE	3080	2680	2350	1	2.8	234--
GR. GOSAU G.	536	AT1101	CEU	47.48	13.6	6-4-6	NW	NW	2810	2520	2250	1.5	2.2	2----
GROSSELEND K.	542	AT1001	CEU	47.03	13.32	6-3-6	NW	NW	3140	2720	2410	2.8	2.4	2----
GRUENAU F.	599	AT0315	CEU	46.98	11.2	6-4-8	N	N	3411	2958	2388	1.6	2.2	2----
GURGLER F.	511	AT0222	CEU	46.8	10.98	5-2-8	NW	N	3420	2990	2270	11.9	8	2----
GUSLAR F.	490	AT0210	CEU	46.85	10.8	6-4-8	E	SE	3480	3120	2780	2.6	2.5	2----
HALLSTAETTER G.	535	AT1102	CEU	47.48	13.62	6-0-8	NE	NE	2910	2560	2250	2.6	2.3	234--
HAUER F.	10458		CEU	47.047	10.912	6-5-8	NE	NE						2----
HINTEREIS F.	491	AT0209	CEU	46.8	10.77	5-2-8	E	NE	3714	3130	2547	6.1	5.7	23456
HOCHALM K.	538	AT1005	CEU	47.02	13.33	6-3-6	E	E	3350	2880	2540	3.2	2.4	2----
HOCHJOCH F.	492	AT0208	CEU	46.78	10.82	5-2-6	N	NW	3500	3030	2300	2.6	3.8	2----
HORN K. (SCHOB.)	531	AT1202	CEU	46.97	12.77	6-4-8	N	NW	3010	2780	2600	0.5	1.1	2----
HORN K. (ZILLER)	589	AT0402	CEU	47	11.82	5-3-8	N	N	3217	2819	2119	3.1	3	2----
INN. PIRCHLKAR	505	AT0228	CEU	47	10.92	6-5-6	E	NE	3340	2990	2720	0.6	1.8	2----
JAMTAL F.	480	AT0106	CEU	46.858	10.156	5-2-8	N	N	3120	2780	2450	2.7	2.8	234-6
KAELBERSPITZ K.	540	AT1003	CEU	47.03	13.28	6-0-8	N	N	2890	2690	2450	0.8	2.2	2----
KALSER BAERENKOPF K.	2676		CEU	47.11	12.6	X-X-X								2----
KARLINGER K.	568	AT0701	CEU	47.13	12.7	6-2-4	NE	N	3340	2800	2060	4	3.6	2----
KESSELWAND F.	507	AT0226	CEU	46.838	10.793	6-3-8	SE	E	3497	3196	2850	3.5	3.7	23456
KLEINEISER K.	555	AT0717	CEU	47.15	12.67	6-4-6	NW	NW	2880	2730	2620	0.2	0.7	2----
KLEINELEND K.	541	AT1002	CEU	47.07	13.25	6-3-4	NE	NE	3190	2750	2150	3	2.7	2----
KLEINFLEISS K.	547	AT0801	CEU	47.053	12.947	6-0-6	W	W	3080	2840	2700	0.8	2.3	234--
KLOSTERTALER M	485	AT0102B	CEU	46.87	10.07	6-0-8	W	W	3220	2940	2640	0.4	1.6	2----
KRIMMLER K.	584	AT0501A	CEU	47.08	12.25	6-2-6	NW	NW	3490	2550	1910	7.5	3.5	2----
LANDECK K.	569	AT0604	CEU	47.13	12.58	6-4-6	N	N	2940	2600	2430	0.4	0.9	2----
LANGTALER F.	510	AT0223	CEU	46.789	11.019	5-3-8	N	NW	3420	2910	2450	3	5.1	2----
LATSCH F.	4338		CEU	46.855	10.962	X-X-X	NW	NW				1.7		2----
MARZELL F.	515	AT0218	CEU	46.78	10.88	5-2-8	NW	N	3620	3160	2450	5.1	4.4	2----
MAURER K. (GLO.)	558	AT0714	CEU	47.18	12.68	6-4-6	W	W	2890	2730	2610	0.5	1.4	2----
MUTMAL F.	506	AT0227	CEU	46.78	10.92	6-4-8	N	NW	3520	3080	2720	0.8	1.5	2----
NIEDERJOCH F.	516	AT0217	CEU	46.78	10.87	5-2-8	N	N	3600	3100	2690	2.9	3	2----
OBERSULZBACH K.	583	AT0502	CEU	47.111	12.293	5-1-8	NW	NW	3600	2730	1990	15.3	5.7	2----
OCHSENTALER G.	483	AT0103	CEU	46.85	10.1	5-2-8	N	N	3160	2910	2400	2.6	2.8	2----
OEDENWINKEL K.	559	AT0712	CEU	47.11	12.645	5-3-9	NW	NW	3180	2590	2130	2	3.8	2----
PASTERZE	566	AT0704	CEU	47.1	12.7	5-2-8	SE	SE	3600	2990	2000	15.3	9.4	234-6
PFAFFEN F.	591	AT0324	CEU	46.965	11.135	6-4-8	W	W	3470	3060	2770	1.2	1.8	2----
RETTENBACH F.	488	AT0212	CEU	46.93	10.93	6-4-6	N	N	3350	2920	2610	1.8	2.5	2----
ROFENKAR F.	518	AT0215	CEU	46.88	10.88	6-4-4	SE	SE	3750	3290	2820	1.3	2.2	2----
ROTER KNOPF K.	3297		CEU	46.97	12.75	X-X-X								2----
ROTMOOS F.	509	AT0224	CEU	46.82	11.05	6-2-8	N	N	3410	2960	2370	3.2	3.3	2----
SCHALF F.	514	AT0219	CEU	46.78	10.93	5-2-8	NW	NW	3500	3130	2500	8.5	5.6	2----
SCHLADMINGER G.	534	AT1103	CEU	47.47	13.63	6-4-6	NE	NE	2700	2600	2420	0.8	0.9	2----
SCHLATEN K.	580	AT0506	CEU	47.112	12.384	5-1-8	NE	NE	3670	2810	1940	11.3	6.3	2----
SCHLEGEIS K.	586	AT0405	CEU	46.98	11.77	6-0-4	NW	NW	3480	2858	2485	4.3	1.7	2----
SCHMIEDINGER K.	548	AT0726	CEU	47.18	12.68	6-0-6	NE	NE	3160	2750	2410	1.8	2	2----
SCHNEEGLOCKEN	525	AT0109	CEU	46.87	10.1	6-4-6	NE	NE	3020	2770	2570	0.7	1.2	2----
SCHNEELOCH G.	533	AT1104	CEU	47.5	13.6	6-4-8	NW	NW	2530	2300	2190	0.2	0.8	2----
SCHWARZENBERG F.	501	AT0303	CEU	47.05	11.12	6-3-8	SE	SW	3490	3030	2590	1.8	2.9	2----
SCHWARZENSTEIN	588	AT0403	CEU	47.02	11.85	5-0-8	NW	NW	3228	2907	2327	3.7	2.5	2----
SCHWARZKARL K.	556	AT0716	CEU	47.17	12.67	6-4-6	NW	NW	2970	2750	2560	0.5	1.2	2----
SCHWEIKERT F.	4336		CEU	47.028	10.81	X-X-X	NW	NW				0.8		2----
SEEKARLES F.	10459		CEU	46.977	10.815	6-5-8	E	E	3255	2994	2700	1	2	234--
SEXEGERTEN F.	520	AT0204	CEU	46.9	10.8	6-2-8	N	NE	3470	2950	2560	2.8	2.9	2----
SIMONY K.	575	AT0511	CEU	47.07	12.27	6-0-9	SE	SE	3490	2810	2230	4.2	3.5	2----
SPIEGEL F.	512	AT0221	CEU	46.83	10.95	6-4-8	NW	NW	3430	3080	2780	1.1	1.7	2----
STUBACHER SONNBLICK K.	573	AT0601A	CEU	47.13	12.6	6-0-6	NE	E	3050	2780	2500	0.9	1.5	23--6
SULZTAL F.	503	AT0301	CEU	47	11.08	5-2-8	N	N	3350	2860	2290	4.5	4.1	2----
TASCHACH F.	519	AT0205	CEU	46.902	10.849	5-2-8	N	NW	3760	3130	2240	8.2	5.6	2----
TOTENFELD	524	AT0110	CEU	46.88	10.15	6-4-8	NE	NE	3040	2790	2550	0.7	1.5	2----
TOTENKOPF K.	2680		CEU	47.13	12.66	X-X-X								2----

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
TRIEBENKARLAS F.	592	AT0323	CEU	46.956	11.15	6-4-8	W	W	3460	3040	2760	1.8	2	2----
UMBAL K.	574	AT0512	CEU	47.05	12.25	5-3-8	SW	SW	3440	2850	2230	7.3	5	2----
UNT. RIFFL K.	605	AT0713B	CEU	47.13	12.67	6-4-9	N	NW	2910	2530	2290	1	2	2----
UNTERSULZBACH K.	582	AT0503	CEU	47.13	12.35	5-2-8	N	NW	3670	2720	2070	5.9	6.3	2----
VENEDIGER K.	10460		CEU	47.125	12.34	5-3-8	W	W	3400		2500	1.8		-34--
VERBORGENBERG F.	593	AT0322	CEU	47.07	11.12	6-4-6	E	E	3260	3000	2780	0.9	1.3	2----
VERMUNT G.	482	AT0104	CEU	46.85	10.13	6-2-8	NW	NW	3130	2790	2500	2.2	2.8	2----
VERNAGT F.	489	AT0211	CEU	46.88	10.82	6-2-6	S	SE	3585	3152	2850	6.9	2.6	23456
VILTRAGEN K.	581	AT0505	CEU	47.13	12.37	5-2-8	NE	E	3480	2660	2190	4.3	4.5	2----
W. TRIPP K.	539	AT1004	CEU	47.02	13.32	6-4-6	SE	S	3230	2880	2780	0.6	1.5	2----
WASSERFALLWINKL	565	AT0705	CEU	47.12	12.72	6-3-8	SE	S	3150	2870	2610	1.9	2.5	2----
WAXEGG K.	590	AT0401	CEU	47	11.8	6-3-6	NE	N	3327	2848	2424	3.1	2	2----
WEISSEE F.	523	AT0201	CEU	46.85	10.72	6-0-8	N	N	3530	2970	2540	3.5	3.4	2----
WILDGERLOS	587	AT0404	CEU	47.151	12.106	6-0-8	N	N	3260	2650	2110	3.7	2.8	2----
WINKL K.	537	AT1006	CEU	47.02	13.32	6-4-8	W	W	3100	2710	2390	0.7	1.5	2----
WURTEN K.	545	AT0804	CEU	47.039	13.005	6-2-8	SW	S	3120	2680	2550	0.2	3	23456
ZETTALUNITZ/MULLWITZ K.	578	AT0508	CEU	47.08	12.38	6-3-8	SW	SW	3470	2980	2700	2.6	4.5	234--
BO - Bolivia														
CHARQUINI SUR	2667		TRP	-16.303	-68.107	X-X-X	S	S	5384	5209	5034	0.3	0.3	-345-
ZONGO	1503	BO5150	TRP	-16.28	-68.14	5-3-8	S	E	6107	5486	4865	1.8	1.8	23456
CA - Canada														
CONRAD	10498		WNA	50.81	-116.94	2-1-8	NE	NE	3235	2588	1800	11.4	7.7	234--
DEVON ICE CAP NW	39	CA0431	ACN	75.42	-83.25	3-0-3	NW	NW	1820	1200	0	1688	50	-3---
HELM	45	CA0855	WNA	49.958	-122.987	6-2-6	NW	NW	2150	1900	1700	0.8	2.4	-3--6
ILLECILLEWAET	1400	CA0940	WNA	51.23	-117.42	2-3-3	NW	NW	2908	2516	2000	7.7	4.3	234--
KOKANEE	23	CA1190	WNA	49.75	-117.14	6-3-8	NE	NE	2805	2586	2200	1.8	1.4	234--
MEIGHEN ICE CAP	16	CA1335	ACN	79.95	-99.13	3-0-3			260	600	90	58	56	-3---
MELVILLE SOUTH ICE CAP	3690		ACN	75.4	-115	3-0-0			715		526	51		-3---
NORDIC	10497		WNA	51.42	-117.71	6-3-6	N	N	2990	2512	2000	3.4	2	234--
PEYTO	57	CA1640	WNA	51.66	-116.564	5-3-8	NE	NE	3190	2640	2100	11.4	5.3	-3---
PLACE	41	CA1660	WNA	50.425	-122.601	5-3-8	NE	NW	2610	2089	1800	3.2	4.2	-3--6
WHITE	0	CA2340	ACN	79.45	-90.695	5-1-5	SE	SE	1782	1160	75	38.5	14	-3456
ZILLMER	10496		WNA	52.66	-119.57	6-3-6	N	NW	2860	2372	1800	5.4	3.6	234--
CH - Switzerland														
ADLER	3801	CH0016B	CEU	46.01	7.87	6-2-8	W	W	4119	3465	2900	2	3.1	-3456
ALBIGNA	1674	CH0116	CEU	46.302	9.644	X-X-X	N	N	3077	2491	2179	5.7	3.4	2----
ALLALIN	394	CH0011	CEU	46.05	7.93	6-2-6	N	E	4180	3323	2693	9.6	6.8	23456
ALPETLI (KANDER)	439	CH0109	CEU	46.48	7.8	5-3-6	NW	SW	3211	2791	2307	12.2	6.3	2----
AMMERTEN	435	CH0111	CEU	46.42	7.53	6-0-7	NW	NW	3240	2720	2350	1.9	2.8	2----
AROLLA (BAS)	377	CH0027	CEU	45.98	7.5	5-1-9	N	N	3649	3086	2168	5.4	5.1	2----
BASODINO	463	CH0104	CEU	46.42	8.48	6-3-6	NE	NE	3178	2886	2600	1.8	1.5	23456
BIFERTEN	422	CH0077	CEU	46.82	8.95	5-3-8	E	NE	3602	2883	2004	2.5	4.4	2----
BLUEMLISALP	436	CH0064	CEU	46.5	7.77	6-1-6	NW	NW	3646	2986	2338	2.2	2.5	2----
BOVEYRE	459	CH0041	CEU	45.972	7.256	5-2-9	NW	NW	3617	3256	2691	1.6	2.6	2----
BRENEY	368	CH0036	CEU	45.97	7.42	5-1-7	S	SW	3814	3348	2576	7	6.3	2----
BRESCIANA	465	CH0103	CEU	46.5	9.03	6-3-6	W	W	3368	3127	2934	0.5	0.8	2----
BRUNEGG	384	CH0020	CEU	46.14	7.72	5-3-0	NW	NW	3791	3165	2624	5.5	4.7	2----
BRUNNI	427	CH0072	CEU	46.73	8.78	6-2-4	E	N	3275	2726	2564	2.3	3.5	2----
CALDERAS	403	CH0095	CEU	46.53	9.707	6-1-7	N	NE	3260	3085	2773	0.7	1.2	2----
CAMBRENA	399	CH0099	CEU	46.393	9.994	6-1-4	NE	NE	3252	2974	2493	1.3	2	2----
CAVAGNOLI	464	CH0119	CEU	46.45	8.48	6-2-8	NE	E	2810	2714	2542	0.4	1.2	2----
CHEILLON	375	CH0029	CEU	46	7.42	5-1-7	N	N	3629	2961	2684	3.6	3.8	2----
CLARIDENFIRN	2660	CH0141	CEU	46.846	8.901	6-0-0			3251		2500	4.3		-3456
CORBASSIERE	366	CH0038	CEU	45.98	7.3	5-1-9	N	N	4319	3234	2300	15.1	9.8	-3456
CORNO	468	CH0120	CEU	46.45	8.38	6-5-6	N	N	2884	2747	2601	0.1	0.6	2----
CORVATSCH SOUTH	4535		CEU	46.415	9.822	X-X-X	E	E	3423		3000	0.2		-345-
CROSLINA	1681	CH0121	CEU	46.43	8.73	X-X-X	NE	NE	3033	2802	2722	0.1	0.5	2----
DAMMA	429	CH0070	CEU	46.63	8.45	6-1-6	E	NE	3311	2869	2062	4.2	2.2	2----
EIGER	442	CH0059	CEU	46.567	7.985	6-1-6	W	NW	3720	3088	2400	1.5	2.6	2----
EN DARREY	374	CH0030	CEU	46.02	7.38	6-3-9	NE	NE	3674	3085	2491	1.2	1.8	2----
FEE NORTH	392	CH0013	CEU	46.08	7.88	6-0-6	NE	NE	4360	3260	2135	16.7	5.1	2----
FERPECLE	379	CH0025	CEU	46.02	7.58	5-3-8	NW	N	3668	3280	2140	9	6.1	2----
FINDELEN	389	CH0016	CEU	46	7.87	5-1-6	NW	W	3937	3322	2500	12.7	6.9	23456
FIRNALPELI	424	CH0075	CEU	46.78	8.47	6-0-6	NW	N	2920	2680	2172	1.2	1.1	2----
FORNO	396	CH0102	CEU	46.3	9.7	5-1-9	N	N	3324	2721	2231	8.9	5.8	2----
GAMCHI	440	CH0061	CEU	46.512	7.794	6-1-9	N	N	2765	2230	1958	1.2	1.8	2----
GAULI	449	CH0052	CEU	46.62	8.18	5-1-6	E	E	3611	2935	2140	11.3	6.4	2----
GIETRO	367	CH0037	CEU	46	7.38	6-3-4	NW	W	3817	3229	2753	5.3	4.5	-3456
GLAERNISCH	418	CH0080	CEU	47	8.98	6-2-6	W	W	2903	2532	2355	1.4	2.3	2----
GORNER	391	CH0014	CEU	45.97	7.8	5-1-9	N	NW	4576	3351	2173	51.3	13.4	2----
GRAND DESERT	373	CH0031	CEU	46.07	7.342	6-3-6	NW	N	3215	2961	2801	1.1	1.7	2----
GRAND PLAN NEVE	455	CH0045	CEU	46.25	7.15	6-4-7	N	N	2539	2458	2375	0.1	0.3	2----
GRIES	359	CH0003	CEU	46.445	8.34	5-3-4	NE	NE	3307	2945	2432	4.2	5.5	23456
GRIESS (KLAUSEN)	425	CH0074	CEU	46.83	8.83	6-1-7	N	NW	3080	2420	2223	2.5	1.3	2----
GRIESSEN (OBWALDEN)	423	CH0076	CEU	46.85	8.5	6-2-6	W	NW	2830	2609	2479	0.9	1.7	2----
GROSSER ALETSCH	360	CH0005	CEU	46.5	8.03	5-1-9	SE	S	4126	3153	1649	83	23.6	2----
HINTERSULZFIRN	419	CH0079	CEU	46.88	9.05	6-5-8	N	N	2086	1956	1815	0.2	1	2----
HOHLAUB	3332		CEU	46.059	7.918	X-X-X			4022		2800	2.1		23456
KALTWASSER	363	CH0007	CEU	46.25	8.08	6-0-6	NW	W	3262	2967	2757	1.5	1.9	2----
KEHLEN	431	CH0068	CEU	46.68	8.42	5-1-8	SE	SE	3311	2783	2161	1.7	3.4	2----
KESSJEN	393	CH0012	CEU	46.065	7.928	6-5-6	NE	NE	3223	2969	2873	0.5	0.3	2----
LAEMMERN (WILDSTRUBEL)	437	CH0063	CEU	46.4	7.55	6-1-6	E	E	3231	3005	2558	2.3	2.5	2----
LAVAZ	416	CH0082	CEU	46.63	8.93	6-1-8	NE	N	3020	2580	2428	1.8	2.6	2----
LENTA	414	CH0084	CEU	46.513	9.038	5-2-7	N	N	3379	2944	2393	0.8	2.3	2----
LIMMERN	421	CH0078	CEU	46.813	8.977	6-2-7	NE	NE	3404	2779	2328	2.4	3.1	2----
MOIRY	380	CH0024	CEU	46.08	7.6	5-1-8	N	N	3640	3194	2388	4.9	5.1	2----
MONT DURAND	369	CH0035	CEU	45.92	7.33	5-1-9	E	NE	4058	3057	2402	6	5.5	2----
MONT MINE	378	CH0026	CEU	46.02	7.55	5-1-9	NW	N	3711	3230	2023	9.8	5.4	2----
MORTERATSCH, VADRET DA	1673	CH0094	CEU	46.4	9.93	5-1-9	N	N	3972	3011	2021	14.2	7.4	2----
MURTEL VADRET DAL	4339		CEU	46.408	9.824	X-X-X	E	E	3321	3167	3050	0.3	1	-3456
MUTT	472	CH0002	CEU	46.55	8.42	6-5-6	NW	NW	2944	2774	2649	0.4	1	2----
OBERAAR	451	CH0050	CEU	46.535	8.22	5-2-4	NE	NE	3388	2878	2310	3.7	4.7	---5-
OBERER GRINDELWALD	444	CH0057	CEU	46.62	8.1	5-1-8	NW	NW	3705	3030	1392	8.4	6.2	2----

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
PALUE	398	CH0100	CEU	46.37	9.98	6-2-9	E	E	3847	3189	2592	5.3	2.5	2----
PANEYROSSE	456	CH0044	CEU	46.27	7.17	6-4-6	N	N	2756	2568	2452	0.3	0.6	2----
PARADIES	412	CH0086	CEU	46.5	9.07	6-0-6	N	NE	3136	2872	2566	2	1.8	2----
PARADISINO (CAMPO)	397	CH0101	CEU	46.421	10.109	6-3-9	NW	W	3043	2945	2833	0.3	0.7	2----
PIZOL	417	CH0081	CEU	46.961	9.39	6-5-6	N	N	2761	2683	2600	< 0.1	0.4	23456
PLAINE MORTE, GLACIER DE LA	4630	CH0065	CEU	46.38	7.517	X-X-X			2944	2725	2400	7.1	3.7	-3456
PLATTALVA	420	CH0114	CEU	46.833	8.989	6-5-6	E	E	2941	2740	2601	0.7	0.9	2----
PORCHABELLA	410	CH0088	CEU	46.63	9.88	6-1-6	N	N	3243	2881	2663	1.7	2.2	2----
PRAPIO	453	CH0048	CEU	46.32	7.2	6-5-7	NW	NW	2854	2753	2558	0.2	0.7	2----
PUNTEGLIAS	415	CH0083	CEU	46.791	8.949	6-1-7	SE	S	2984	2602	2348	0.5	2	2----
RAETZLI (PLAINE MORTE)	434	CH0065	CEU	46.39	7.51	6-2-6	N	NW						2----
RHONE	473	CH0001	CEU	46.62	8.4	5-1-4	S	S	3596	2958	2200	15.3	10.1	23456
RIED	387	CH0017	CEU	46.13	7.85	5-3-9	NW	NW	4244	3476	2078	7.3	5.3	2----
ROSEG	406	CH0092	CEU	46.378	9.839	5-1-7	N	N	3517	3127	2197	6.7	3.7	2----
SALEINA	458	CH0042	CEU	45.98	7.07	5-1-8	E	NE	3871	3030	1850	6.5	6.4	2----
SANKT ANNA	432	CH0067	CEU	46.597	8.601	6-3-6	N	N	2888	2720	2600	0.1	0.7	23456
SARDONA	407	CH0091	CEU	46.92	9.27	6-4-6	E	E	3003	2745	2583	0.4	0.6	2----
SCALETTA	1680	CH0115	CEU	46.7	9.95	6-5-0	N	N	3050	2893	2590	0.2	0.8	2----
SCHWARZBACH	4340		CEU	46.597	8.612	X-X-X	NE	NE	2829	2754	2700	< 0.1	0.3	-3456
SCHWARZBERG	395	CH0010	CEU	46.02	7.93	6-2-6	NE	NE	3566	3044	2600	4.9	4.1	23456
SEEWJINEN	3333		CEU	46.002	7.95	X-X-X			3228	3004	2719	1.4	1.8	2----
SESVENNA	401	CH0097	CEU	46.713	10.411	6-5-6	NE	N	3065	2930	2748	0.4	1	2----
SEX ROUGE	454	CH0047	CEU	46.328	7.215	6-5-6	N	NW	2876	2808	2700	0.3	0.6	23456
SILVRETTA	408	CH0090	CEU	46.85	10.08	6-2-6	NW	W	3083	2782	2480	2.5	3.3	23456
STEIN	448	CH0053	CEU	46.7	8.43	5-2-8	N	N	2974	2725	2491	0.5	0.9	2----
STEINLIMMI	447	CH0054	CEU	46.7	8.4	5-1-7	N	N	3300	2640	2100	2.2	2.7	2----
SURETTA	411	CH0087	CEU	46.52	9.38	6-1-7	NE	NE	3010	2720	2227	1.2	1.6	2----
TIATSCHA	402	CH0096	CEU	46.833	10.087	6-3-4	S	S	3080	2886	2667	1.8	2.1	2----
TIEFEN	433	CH0066	CEU	46.62	8.43	5-1-9	SE	SE	3336	2956	2501	2	2.7	2----
TORTIN GLACIER DE (MONT FORT)	372	CH0032	CEU	46.085	7.308	6-3-6	NW	N	3330	2900	2780	1.1	2	2----
TRIENT	457	CH0043	CEU	46	7.03	5-3-8	N	N	3460	3132	2099	5.7	4.4	2----
TRIFT (GADMEN)	446	CH0055	CEU	46.67	8.37	5-1-8	N	N	3381	2931	1753	14.6	6.4	2----
TSANFLEURON	371	CH0033	CEU	46.32	7.23	6-5-6	E	E	2960	2769	2500	2.5	2.9	23456
TSCHIERVA	405	CH0093	CEU	46.4	9.88	5-1-8	NW	NW	4000	3060	2340	6.8	5	2----
TSCHINGEL	441	CH0060	CEU	46.5	7.85	6-2-7	N	E	3510	2680	2269	6.2	3.8	2----
TSEUDET	364	CH0040	CEU	45.9	7.25	6-1-7	N	N	3714	2919	2524	1.4	2.9	2----
TSIDJIORE NOUVE	376	CH0028	CEU	46	7.45	5-2-8	N	NE	3783	3266	2289	2.7	5	2----
TURTMANN (WEST)	385	CH0019	CEU	46.13	7.69	5-2-8	NW	N	4147	3382	2294	5.1	5.9	2----
UNTERER GRINDELWALD	443	CH0058	CEU	46.577	8.095	5-1-9	N	N	4100	2780	1090	20.6	9	2----
VALLEGGIA	467	CH0117	CEU	46.472	8.506	6-4-8	NE	NE	2785	2519	2430	0.3	1.3	2----
VALSOREY	365	CH0039	CEU	45.9	7.27	5-1-8	NE	NW	3720	3173	2440	1.9	3.8	2----
VERSTANKLA	409	CH0089	CEU	46.843	10.068	6-1-7	NW	NW	2983	2693	2430	0.7	1.8	2----
VORAB	413	CH0085	CEU	46.88	9.17	6-0-6	E	SE	2953	2706	2621	1.2	1.8	2----
WALLENBUR	428	CH0071	CEU	46.707	8.47	6-1-9	E	SE	3126	2570	2263	1.4	2.3	2----
ZINAL	382	CH0022	CEU	46.07	7.63	5-1-9	N	N	4074	3112	2078	13.3	7.3	2----
CL - Chile														
AMARILLO	3905		SAN	-29.303	-70.001	6-3-8	SE	SE	5315	5180	5160	0.2	0.6	-3--6
ECHAURREN NORTE	1344	CL0001B	SAN	-33.578	-70.131	6-4-3	SW	SW	3880	3750	3650	0.4	1.2	-3--6
MOCHO CHOSHUENCO SE	3972		SAN	-39.945	-72.015	4-X-X	SE	SE	2422		1600	5		-345-
CN - China														
PARLUNG NO. 94	3987	CN0094	ASE	29.386	96.976	5-2-8	NW	NW	5635	5358	5075	2.4	2.9	-34-6
URUMQI GLACIER NO. 1	853	CN0010	ASC	43.118	86.811	5-1-2	NE	NE	4482	4066	3787	1.6	2.1	234-6
URUMQI GLACIER NO. 1 E-BRANCH	1511	CN0001	ASC	43.111	86.811	5-3-8	NE	NE	4252	4021	3787	1	2.1	2345-
URUMQI GLACIER NO. 1 W-BRANCH	1512	CN0002	ASC	43.118	86.804	5-3-8	NE	NE	4482	4121	3883	0.6	1.8	2345-
CO - Colombia														
CONEJERAS	2721	CO0033	TRP	4.815	-75.373	6-3-6	NW	NW	4893	4788	4680	0.1	0.8	23456
RITACUBA BLANCO	2763		TRP	6.494	-72.31	6-3-6	w	w	5330	5029	4820	0.4	1.4	23456
EC - Ecuador														
ANTIZANA15ALPHA	1624	EC1DA15	TRP	-0.47	-78.15	4-7-8	NW	NW	5760	5309	4857	0.3	1.9	-3456
ES - Spain														
MALADETA	942	ES9020	CEU	42.649	0.639	6-8-6	S	S	3190	3040	2875	0.2	0.7	234-6
FR - France														
ARGENTIERE	354	FR0002	CEU	45.954	6.985	5-1-9	NW	NW	3500	2600	1500	13.5	9	23--6
BLANC	351	FR0031	CEU	44.944	6.387	5-2-8	E	S	4000	3000	2500	7.7	7	2----
BOSSONS	355	FR0004	CEU	45.88	6.865	5-2-8	N	N	4800	3200	1190	10.5	7.2	2----
GEBROULAZ	352	FR0009	CEU	45.298	6.629	5-2-9	N	N	3400	3000	2600	2.8	3	-3---
MER DE GLACE	353	FR0003	CEU	45.88	6.93	5-1-9	N	N	4100	2700	1800	22.7	13	2----
OSSOUE	2867		CEU	42.771	-0.143	5-2-9	E	E	3200	3000	2650	0.5	1.4	23---
SAINT SORLIN	356	FR0015	CEU	45.16	6.16	5-2-9	N	N	3400	2900	2600	3	3	23---
SARENNES	357	FR0029	CEU	45.116	6.129	5-4-8	S	S	2973	2905	2848	0.5	0.6	-3--6
GE - Georgia														
CHALAATI	1110	GE0287	CAU	43.13	42.7	5-1-9	SE	SE	4300	3140	1980	9.2	6.7	2----
GL - Greenland														
FREYA	3350		GRL	74.38	-20.82	5-2-8	N	NW	1250		200	5.3	6	-34--
MITTIVAKKAT	1629	GL0019	GRL	65.696	-37.803	2-2-3	SW	SW	899		180	15.9	7.5	23--6
QASIGIANNGUIT	4566	GL0003	GRL	64.16	-51.35	6-3-8	N	N	1000	860	700	0.7	1.3	-345-
HM - Heard & McDonald Islands														
UN-NAMED 9	2910		ANT	-53.013	73.337	7-7-6	S	S	550	400	250		0.6	2----
IN - India														
BARA SHIGRI	2920		ASW	32.16	77.7	X-X-X	NW	NW	6425	5325	3925	110.7		23--6
BATAL	7182		ASW	32.34	77.568	6-3-9			6117	5370	4447	4.9		23--6
CHHOTA SHIGRI	2921		ASW	32.235	77.516	5-1-9	N	N	6263	5020	4050	15.6	9	-3--6
GEPANG GATH	10475		ASW	32.5	77.23	X-X-X						12.3		23---
PENSILUNGPA (GLACIER NO. 10)	3655		ASW	33.82	76.287	X-X-X			5908	5224	4636	10.6		23--6
SAMUDRA TAPU	3635		ASW	32.488	77.415	X-X-X			6161	5255	4233	79		23--6
STOK	10499		ASW	33.979	77.452	X-X-X								-3---

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
SUTRI DHAKA	10476		ASW	32.35	77.52	X-X-X						19.6		23---
IS - Iceland														
BLAGNIPUJOKULL	3130		ISL	64.72	-19.13	4-X-3	SW	SW	1700		740	51.5	11	2----
BREIDAMJOKULL E. B.	3062	IS1126B	ISL	64.22	-16.33	4-2-4	S	SE	1900	1175	20	995	40	2----
BREIDAMJOKULL W. A.	3063	IS1125A	ISL	64.06	-16.4	4-2-4	E	SE	1900		60	160	20	2----
BRUARJOKULL	3067	IS2400	ISL	64.67	-16.17	4-3-3	N	N	1800	1260	590	1495	54	-3--6
BURFELLSJOKULL	8287		ISL	65.82	-18.705	X-X-X			1119	928	812	0.9	1.6	2----
DEILDARDALSJOKULL	23652		ISL	65.84	-18.97	X-X-X						1.5		2----
DYNGJUJOKULL	3068	IS2600	ISL	64.67	-17	4-2-3	N	N	200	1440	720	1039	46	-3---
EYJABAKKAJOKULL	3069	IS2300	ISL	64.65	-15.58	4-2-3	N	NE	1565	1130	690	106.5	15	-3---
FALLJOKULL	3071	IS1021	ISL	63.98	-16.75	4-3-3	W	W	2000		140	8	8	2----
FJALLSJOKULL BY BREIDAMERKURFJALL	3073	IS1024A	ISL	64.04	-16.4	4-3-4	SE	E	2040		40	45	15	2----
FJALLSJOKULL BY GAMLASEL	3074	IS1024C	ISL	64.01	-16.42	4-3-4	SE	E	2040		40	48	15	2----
FLAAJOKULL	3078	IS1930A	ISL	64.363	-15.653	4-3-2	SE	SE	1520		50	180	29	2----
FLAAJOKULL E 148	3076	IS1930C	ISL	64.363	-15.653	4-3-2	SE	SE	1520		50	180	29	2----
GEITLANDSJOKULL	3128		ISL	64.598	-20.601	4-X-3	W	W	1420		800	1.4	8	2----
GLJUFURARJOKULL	3080	IS0103	ISL	65.72	-18.65	5-4-8	N	N	1350		600	3.2	2.5	2----
HAGAFELLSJOKULL E	3081	IS0306	ISL	64.49	-20.26	4-3-3	SW	SW	1420		440	111	19	2----
HAGAFELLSJOKULL W	3082	IS0204	ISL	64.49	-20.41	4-3-3	SW	SW	1420		450	137	18	2----
HEINABERGSJOKULL H	3084	IS1829B	ISL	64.315	-15.808	4-2-4	E	E			70	100.6	22.7	2----
HOFSJOKULL E	3088	IS0510B	ISL	64.8	-18.58	4-3-3	E	E	1790	1180	640	213.1	17	-34-6
HOFSJOKULL N	3089	IS0510A	ISL	64.92	-18.83	4-3-3	N	N	1720	1245	865	73.7	15	-34--
HOFSJOKULL SW	3090	IS0510C	ISL	64.72	-19.05	4-3-3	SW	SW	1775	1370	740	48.8	10.5	-34-6
HRUTARJOKULL	3091	IS0923	ISL	64.02	-16.53	4-3-3	E	E	1900		60	12.2	2	2----
HYRNINGSJOKULL	3092	IS0100	ISL	64.81	-23.73	4-3-3	E	E	1445		700	2	2	2----
JOKULHALS	3093	IS0201	ISL	64.82	-23.75	4-3-3	E	E	1450	1000	820	11	3	2----
KALDALONSJOKULL	3095	IS0102	ISL	66.12	-22.29	4-3-3	SW	SW	900		140	37	6	2----
KIRKJUJOKULL	3129		ISL	64.73	-19.85	4-X-3	SE	E	1450		700	23	8	2----
KOLDUKVISLARJ.	3096	IS2700	ISL	64.58	-17.83	4-3-3	NW	NW	2000	1420	900	289	27	-3---
KVIARJOKULL	3098	IS0822	ISL	63.97	-16.57	4-3-3	SE	SE	2100		30	25.7	14.1	2----
LAMBATUNGNAJOKULL	10418		ISL	64.52	-15.39	X-X-X	SE	SE				36.3		2----
LANGJOKULL ICE CAP	3660		ISL	64.67	-20.1	3-0-0						836		-3--6
LEIRUFJARDARJOKULL	3102	IS0200	ISL	66.19	-22.44	4-3-3	NW	NW	925		140	27	6	2----
MORSARJOKULL	3104	IS0318	ISL	64.09	-16.94	4-3-3	SW	SW	1380		170	28.9	10.8	2----
MULAJOKULL S	3105	IS0311A	ISL	64.67	-18.66	4-3-2	SE	SE	1790		610	70	20	2----
MULAJOKULL W	3106	IS0311B	ISL	64.67	-18.72	4-3-1	S	SE	1800	1300	600	100	19	2----
NAUTHAGAJOKULL	3107	IS0210	ISL	64.65	-18.76	4-3-3	S	S	1780		630	25	18	2----
REYKJAFJARDARJOKULL	3109	IS0300	ISL	66.2	-22.18	4-3-3	NE	NE	925		100	22	7	2----
RJUPNABREKKUJOKULL	3136		ISL	64.72	-17.56	4-X-3	NW	NW	1940		1060		7	2----
SATUJOKULL E	3099	IS0409	ISL	64.97	-18.86	4-3-0	N	N						2----
SATUJOKULL W	3110	IS0530	ISL	64.95	-18.92	4-3-3	N	N	1790		860	91	20	2----
SIDUJOKULL E M 177	3112	IS0015B	ISL	64.11	-17.74	4-3-2	SW	S	1720		590	380	40	2----
SKAFTAFELLSJOKULL	3113	IS0419	ISL	64.02	-16.9	4-2-3	SW	SW	1900		95	90.5	19.3	2----
SKEIDARARJOKULL E1	3116	IS0117A	ISL	64.03	-17.09	4-3-2	S	S	1725		100	850	50	2----
SKEIDARARJOKULL E2	3117	IS0117B	ISL	64.01	-17.11	4-3-2	S	S	1725		100	850	50	2----
SKEIDARARJOKULL E3	3118	IS0117C	ISL	64.01	-17.14	4-3-2	S	S	1725		100	850	50	2----
SOLHEIMAJOKULL W	3122	IS0113A	ISL	63.53	-19.37	4-3-3	SW	SW	1500		110	44	15	2----
SVINAFELLSJOKULL	3124	IS0520A	ISL	63.99	-16.88	4-2-3	W	SW	2119		100	32.2	12	2----
TINDFJALLAJOKULL	10493		ISL	63.788	-19.524	X-X-X								2----
TORFAJOKULL N	23777		ISL	63.903	-19.001	X-X-X						5.6		2----
TORFAJOKULL S	23779		ISL	63.888	-18.996	X-X-X						0.5		2----
TUNGNAARJOKULL	3126	IS2214	ISL	64.32	-18.07	4-3-3	SW	W	1680	1220	690	330	39	23---
TUNGNAHRYGGSJOKULL	23620		ISL	65.689	-18.811	X-X-X						4.8		2----
IT - Italy														
AGNELLO MER.	684	IT0029	CEU	45.147	6.9	6-4-0	NE	NE	3200	3010	3020	0.5	1.5	2----
ALTA (VEDRETTA) / HOHENF.	632	IT0730	CEU	46.458	10.68	5-3-8	NE	N	3350	3059	2690	1.8	2	2----
AMOLA	638	IT0644	CEU	46.198	10.72	6-3-0	E	E	3120	2785	2510	0.9	1.8	2----
ANTELAO INFERIORE (OCC.)	642	IT0967	CEU	46.45	12.27	6-4-0	N	N	2800	2472	2340	0.2	0.9	2----
ANTELAO SUP.	643	IT0966	CEU	46.45	12.27	6-3-0	N	NE	3130	2465	2510	0.4	1.3	2----
AOUILLE	1239	IT0138	CEU	45.525	7.151	6-4-X			3350		3080	0.2	0.8	2----
ARGUEREY MER.	1253	IT0200	CEU	45.703	6.842	X-X-X			2850		2700	0.2	0.6	2----
ARGUEREY SETT.	1254	IT0201	CEU	45.705	6.834	6-5-X			2900		2580	0.5	0.9	2----
AROLLA	2370	IT0101	CEU	45.558	7.411	X-X-X								2----
BASEI	611	IT0064	CEU	45.477	7.117	6-0-0	NE	NE	3320		2950	0.4	0.8	2----
BASSA DELL' ORTLES / ORTLERF. NIEDERER	1128	IT0769	CEU	46.508	10.512	5-1-8			3560		2230	2.8	3	2----
BELVEDERE (MACUGNAGA)	618	IT0325	CEU	45.95	7.911	5-2-5	NE	NE	4520		1780	5.6	6.1	2----
BERTA	1295	IT0036	CEU	45.232	7.139	X-X-X			3200		2950	0.6	0.2	2----
BESSANESE	1297	IT0040	CEU	45.3	7.12	5-3-2	SE	SE	3210		2585	1	2.6	2----
BORS	2453	IT0311	CEU	45.889	7.871	X-X-X								2----
BREUIL SETT.	1256	IT0203	CEU	45.725	6.816	X-X-X			3000		2900	0.6	0.8	2----
BROGLIO	2375	IT0133	CEU	45.484	7.227	X-X-X								2----
CALDERONE	1107	IT1006	CEU	42.471	13.567	6-4-0	NE	NE	2830	2730	2650	< 0.1	0.3	2----
CAMPO SETT.	1106	IT0997	CEU	46.431	10.108	6-4-6	W	W	3146	3021	2850	0.2	0.8	-3--6
CAPRA	1304	IT0061	CEU	45.447	7.118	6-4-X			2790		2480	0.2	0.9	2----
CARESER	635	IT0701	CEU	46.451	10.709	6-3-8	W	SW	3133	3064	2969	0.8	0.9	-3456
CARRO OCCIDENT.	2358	IT0060	CEU	45.433	7.117	X-X-X								2----
CASPOGGIO	628	IT0435	CEU	46.338	9.914	6-4-8	NW	NW	2985	2800	2725	0.8	1.1	2----
CASSANDRA OR.	1185	IT0411	CEU	46.262	9.756	5-2-X			3100		2915	0.4	1.8	2----
CEDEC	1165	IT0503	CEU	46.449	10.603	5-2-X			3780		2710	2.5	3	2----
CEVEDALE FORCOLA / FUERKELEF.	663	IT0731	CEU	46.45	10.652	5-3-8	E	NE	3750	3105	2670	2.5	3.5	2----
CEVEDALE PRINCIPALE / ZUFALLF.	662	IT0732	CEU	46.458	10.627	5-3-8	E	E	3700	3078	2650	3.2	3.7	2----
CHATEAU BLANC	1251	IT0181	CEU	45.654	7.024	X-X-X			3250		2710	2.2	2.4	2----
CIAMARELLA	1298	IT0043	CEU	45.326	7.133	6-4-X			3400		3095	0.7	0.9	2----
CIARDONEY	1264	IT0081	CEU	45.518	7.39	6-3-9	NE	E	3160		2850	0.6	1.7	234--
COUPE DE MONEY	1271	IT0109	CEU	45.53	7.38	6-4-X			3600		2725	1.5	2	2----
CRODA ROSSA / ROTWANDF.	654	IT0828	CEU	46.733	10.984	6-3-8	N	N	3205	3002	2790	0.2	1	2----
DISGRAZIA	2503	IT0419	CEU	46.283	9.744	X-X-X			3000		2620			2----
DOSDE OR.	625	IT0473	CEU	46.392	10.219	6-4-6	N	N	3200	2850	2580	0.9	1.7	2----
DOSEGU	668	IT0512	CEU	46.374	10.548	5-2-6	SW	SW	3670	3260	2862	3.3	2.8	2----
DZASSET	2372	IT0113	CEU	45.538	7.274	X-X-X			3750		2950			2----
ENTRELOR SETT.	2377	IT0140	CEU	45.532	7.152	X-X-X								2----
FOND OCCID.	2380	IT0146	CEU	45.476	7.074	X-X-X			3000		2710			2----
FOND OR.	1243	IT0145	CEU	45.472	7.083	X-X-X			3300		2720	1.1	2.1	2----
FONTANA BIANCA / WEISSBRUNNF.	1507	IT0713	CEU	46.484	10.771	6-4-0	E	E	3350	3160	2850	0.4	1.2	2----

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
FORNI CENTRALE	670	IT0507	CEU	46.4	10.586	5-2-9	N	NW	3678	3150	2510	20	5	2----
FORNI OCCIDENTALE	10420		CEU	46.401	10.613	5-2-9	NE	NE						2----
FORNI ORIENTALE	10421		CEU	46.389	10.571	5-2-9	NW	NW						2----
FRANE (VEDR. DELLE) / STEINSCHLAGF.	2624	IT0812	CEU	46.779	10.74	X-X-X								2----
GLIAIRETTA VAUDET	1248	IT0168	CEU	45.507	7.019	5-X-X			3300		2700	3.6	3.6	2----
GOLETTA	683	IT0148	CEU	45.497	7.055	5-2-0	N	N	3290	3055	2760	3	2.4	2----
GRAMES ORIENT. + CENTR. / GRAMSENF. OESTL. + ZENTR.	2599	IT0727	CEU	46.469	10.716	X-X-X								2----
GRAN NEYRON	1283	IT0127	CEU	45.55	7.264	5-2-X			3340		2340	1.1	1.7	2----
GRAN PARADISO	1235	IT0130	CEU	45.515	7.254	5-3-X			3980		2970	0.7	1.9	2----
GRAN PILASTRO (GHIAC. DEL) / GLIEDERF.	652	IT0893	CEU	46.973	11.717	5-3-8	SW	W	3370	2935	2500	2.6	3.7	2----
GRAN ZEBRU (CENTRALE)	1164	IT0502	CEU	46.47	10.571	X-X-X			3400		2930	1	1.8	2----
GRAND CROUX CENTR.	1273	IT0111	CEU	45.519	7.309	X-X-X			3300		2560	2	2.1	2----
GRAND ETRET	1238	IT0134	CEU	45.476	7.219	5-2-X			3100		2700	0.4	1.3	23---
GRUETTA ORIENT.	2418	IT0232	CEU	45.897	7.027	X-X-X								2----
HOHSAND SETT. (SABBIONE SETT.)	631	IT0357	CEU	46.4	8.3	6-2-0	NE	E	3180	2860	2550	2	2.9	2----
INDREN OCC.	1209	IT0306	CEU	45.895	7.856	5-3-X			4100		3050	1.7	2.5	2----
LA MARE (VEDRETTA DE)	636	IT0699	CEU	46.43	10.63	5-2-0	NE	NE	3587	3221	2771	1.9	2.7	234--
LAGAUN (VEDRETTA DI) / LAGAUN FERNER	6823	IT0805	CEU	46.733	10.738	X-X-X								2----
LANA (VEDR. DI) / AEUSSERES LAHNER KEES	650	IT0913	CEU	47.068	12.212	5-2-9	NW	NW	3480	2720	2310	1.7	2.9	2----
LAUSON	1275	IT0116	CEU	45.565	7.288	6-4-0	N	N	3370	3100	2965	0.5	1.1	2----
LAVACCIU	1285	IT0129	CEU	45.521	7.254	5-2-X			3770		2810	1.8	2.6	2----
LAVASSEY	1242	IT0144	CEU	45.478	7.106	6-4-X			3130		2700	1.5	1.9	2----
LOBBIA	1150	IT0637	CEU	46.16	10.581	5-3-0	N	N	3438	2968	2620	5.4	1.8	2----
LUNGA (VEDRETTA) / LANGENF.	661	IT0733	CEU	46.468	10.619	5-2-9	NE	E	3371	3143	2700	1.6	2.4	2----
LUPO	1138	IT0543	CEU	46.076	9.99	6-4-6	N	NW	2760	2565	2435	0.2	0.7	23--6
LYS	620	IT0304	CEU	45.9	7.83	5-1-5	SW	SW	4530	3732	2355	11.8	5.6	2----
MADACCIO (VEDR. DEL) / MADATSCHF.	1129	IT0771	CEU	46.508	10.48	5-2-X			3450		2280	3.2	2.2	2----
MALAVALLE (VEDR. DI) / UEBELTALF.	672	IT0875	CEU	46.948	11.185	5-1-5	E	E	3470	3007	2587	5.9	4	2345-
MANDRONE	664	IT0639	CEU	46.173	10.553	5-2-0	NE	NE	3436	3022	2530	12.4	5.4	2----
MARMOLADA CENTR.	676	IT0941	CEU	46.437	11.867	6-0-6	N	N	3340	2825	2720	2.6	1.5	2----
MAROVIN	2547	IT0541	CEU	46.079	10.004	X-X-X			2450		2060			2----
MAZIA (VEDR. DI) / MATSCHERF.	2620	IT0788	CEU	46.783	10.719	X-X-X								2----
MONCIAIR	1237	IT0132	CEU	45.492	7.236	6-5-X			3230		2850	0.5	0.7	2----
MONCORVE	1236	IT0131	CEU	45.5	7.25	6-2-2	NW	NW	3642	3158	2900	2.2	1.5	2----
MONEY	1272	IT0110	CEU	45.525	7.336	5-2-X			3600		2515	1.9	2.6	2----
MONTANDEYNE	1284	IT0128	CEU	45.537	7.26	6-4-X			3400		3100	1.2	1.3	2----
MONTARSO (VEDR. DI) / FEUERSTEINF.	2631	IT0880	CEU	46.967	11.252	X-X-X								2----
NARDIS OCC.	639	IT0640	CEU	46.212	10.659	5-3-0	SE	SE	3500	3160	2790	1.7	2.6	2----
NEL CENTRALE	1303	IT0057	CEU	45.419	7.167	6-5-X			3200		2600	1.1	1.5	2----
NOASCHETTA OCCID.	2359	IT0072A	CEU	45.504	7.278	X-X-X								2----
PALON DELLA MARE LOBO CENTR.	2533	IT0506B	CEU	46.411	10.603	X-X-X			3704					2----
PALON DELLA MARE LOBO OR.	2534	IT0506C	CEU	46.411	10.603	X-X-X								2----
PENDENTE (VEDR.) / HANGENDERF.	675	IT0876	CEU	46.966	11.225	5-2-0	S	S	2950	2780	2628	0.8	1.3	2345-
PERA CIAVAL	1296	IT0037	CEU	45.227	7.094	6-5-X			3200		3050	0.2	0.3	2----
PERCIA	1240	IT0139	CEU	45.471	7.201	6-4-X			3300		3000	0.3	0.8	2----
PIODE	619	IT0312	CEU	45.908	7.878	5-2-0	SE	SE	4436	3120	3470	2.5	2.7	2----
PIZZO FERRE	1181	IT0365	CEU	46.466	9.28	5-3-X			2990		2700	0.9	1.8	2----
PIZZO SCALINO	1187	IT0443	CEU	46.28	9.98	6-3-6	N	N	3100	2920	2585	1.9	2.1	2----
PREDAROSSA	1182	IT0408	CEU	46.256	9.74	5-3-X			3400		2625	0.9	2.5	2----
QUAIRA BIANCA (VEDR. DELLA) / WEISSKARF.	686	IT0889	CEU	46.547	10.859	5-2-0	SW	SW	3509	3132	2605	1.4	2.8	2----
RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	IT0930	CEU	46.903	12.096	6-3-6	N	N	3220	3000	2750	1.6	2.1	2345-
ROCCIA VIVA	2364	IT0078	CEU	45.514	7.333	X-X-X								2----
ROSIM (VEDR. DI) / ROSIMF.	610	IT0754	CEU	46.525	10.64	6-3-0	NW	W	3405	3215	2940	0.8	1.5	2----
ROSSO DESTRO	648	IT0920	CEU	47.03	12.2	5-3-6	W	W	3285	2838	2520	0.9	1.7	2----
RUTOR	612	IT0189	CEU	45.5	7.002	5-2-0	N	NW	3460	2998	2480	9.5	4.8	2----
SALDURA MER. (VEDR. DI) / SALDUR F. SUEDL.	1131	IT0794	CEU	46.742	10.728	6-4-X			3350		2850	0.4	1.3	2----
SCERSCEN INFERIORE	1186	IT0432	CEU	46.355	9.852	5-2-X			3400		2645	7	4.5	2----
SEA	1299	IT0046	CEU	45.336	7.141	5-3-X			3020		2710	0.6	1.9	2----
SENGIE SETT.	1267	IT0102	CEU	45.536	7.402	X-X-X			3280		2700	1	1	2----
SERANA (VEDR.) / SCHRANF.	634	IT0728	CEU	46.467	10.701	6-4-6	N	N	3335	3085	2810	1.2	1.6	2----
SESIA	1210	IT0314	CEU	45.916	7.896	X-X-X			4000		2700	1.1	2.8	2----
SFORZELLINA	667	IT0516	CEU	46.348	10.513	6-4-8	NW	NW	3120	2925	2795	0.4	0.7	2----
SISSONE	2506	IT0422	CEU	46.297	9.719	X-X-X			3100		2625			2----
SOCHES TSANTELEINA	1244	IT0147	CEU	45.485	7.068	6-4-X			3450		2720	3.4	3.5	2----
SOLDA (VEDRETTA DI) / SULDENF.	660	IT0762	CEU	46.494	10.566	5-2-7	NE	NE	3900	2908	2410	6.5	4.2	2----
SURETTA MERID.	2488	IT0371	CEU	46.506	9.361	6-4-7	S	S	2908	2774	2688	0.1	0.5	-3--6
TIMORION	1282	IT0126	CEU	45.558	7.282	6-4-8	NW	NW	3485	3320	3156	0.4	0.8	23---
TORRENT	2384	IT0155	CEU	45.579	7.089	X-X-X			3100		2660			2----
TRAFOI (VEDR. DI) / TRAFOIER F.	2617	IT0770	CEU	46.503	10.497	X-X-X								2----
TRAJO	1278	IT0121	CEU	45.597	7.272	5-3-X			3500		2870	2.2	2.6	2----
TRIBOLAZIONE	1274	IT0112	CEU	45.521	7.284	6-4-X			3870		2785	5.8	2.1	2----
ULTIMA (VEDR.) / ULTENMARKTF.	633	IT0729	CEU	46.465	10.69	6-4-8	N	N	3370	3115	2780	0.5	1.2	2----
VALEILLE	1268	IT0103	CEU	45.52	7.379	5-3-X			3380		2700	1.6	2.5	2----
VALLELUNGA (VEDR. DI) / LANGTAUFERERF.	659	IT0777	CEU	46.817	10.731	5-1-8	NW	NW	3730	3138	2395	8.6	3.9	2----
VENEROCOLO	665	IT0581	CEU	46.164	10.506	5-3-9	NW	N	3280	2810	2570	1.5	2.2	2----
VENTINA	629	IT0416	CEU	46.27	9.77	5-3-6	NE	N	3500	2790	2230	2.4	3.7	2----
JP - Japan														
HAMAG)URI YUKI	897	JP0001	ASN	36.6	137.62	7-3-0	NE	NE	2720		2690	< 0.1	0.1	-3---
KG - Kyrgyzstan														
ABRAMOV	732	KG4101	ASC	39.62	71.56	5-2-8	N	N	4918	4231	3600	23.9	7.8	-3456
BATYSH SOOK/SYEK ZAPADNIY	781	KG5082	ASC	41.79	77.75	5-3-8	N	N	4471	4217	3944	1.1	2.1	-345-
BORDU	829	KG5110	ASC	41.815	78.17	5-2-8	NW	NW	4720	4233	3920	4.8	4.6	234-6
GLACIER NO. 354 (AKSHIYRAK)	3889		ASC	41.799	78.151	5-2-8	NW	NW	4679	4168	3759	6.4	4.4	-3456
GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402		ASC	42.793	76.867	5-3-8	NW	W	4325	4004	3775	1.4	2.3	-345-
GOLUBIN	753	KG5060	ASC	42.46	74.495	5-3-8	NW	NW	4350	3925	3325	5.4	4.7	-3456
KARA-BATKAK	813	KG5080	ASC	42.14	78.27	5-3-8	NW	N	4600	4128	3370	2.5	3.2	234-6
SARY TOR (NO.356)	805	KG5106	ASC	41.83	78.174	5-3-8	W	NW	4730	4295	3950	2.4	4.1	234-6
TURGEN-AKSUU	13057		ASC	42.312	78.857	X-X-X			4525	4100	3675	5.1	7	23456
KG - Kyrgyzstan														
TS.TUYUKSUYSKIY	817	KZ5075	ASC	43.05	77.08	5-3-6	N	N	4219	3826	3494	2.2	2.5	23456

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
NO - Norway														
AALFOTBREEN	317	NO2078	SCA	61.75	5.65	4-3-6	NE	NE	1368	1230	890	4	2.9	-34-6
AUSTDALSBREEN	321	NO2478	SCA	61.815	7.352	4-2-4	SE	SE	1740	1495	1200	10.1	5.7	-34-6
AUSTERDALSBREEN	288	NO31220	SCA	61.62	6.93	4-3-8	SE	SE	1920	1600	390	19.8	8.5	2----
AUSTRE OKSTINDBREEN	3342		SCA	66.019	14.294	X-X-X	N	E	1710		750	14.2	6	2----
BLOMSTOELSKARDSBREEN	3339	NO3141	SCA	59.949	6.332	X-X-X	SW	SW	1632	1505	1011	22.5		2----
BOEVERBREEN	2298	NO0548	SCA	61.55	8.088	X-X-X						1		2----
BONDHUSBREA	318	NO3133	SCA	60.03	6.33	4-3-8	NW	NW	1660	1450	477	10.7	7.8	2----
BOTNABREA	2292	NO20515	SCA	60.192	6.427	4-3-8	W	W				5		2----
BRENNDALSBREEN	2293	NO37109	SCA	61.685	6.933	4-3-8	W	W						2----
BUERBREEN	315	NO3131	SCA	60.033	6.402	4-3-8	E	NE	1640		620	14.3	7.5	2----
ENGABREEN	298	NO1094	SCA	66.65	13.85	4-3-8	N	NW	1574	1220	111	36.8	11.5	234-6
FAABERGSTOELSBREEN	289	NO31015	SCA	61.72	7.23	4-3-8	E	E	1810	1540	760	20.2	7	2----
GRAAFJELLSBREA	1320	NO3127	SCA	60.083	6.399	4-3-8	NW	NW	1647	1500	1049	8	5	2----
GRAASUBREEN	299	NO2743	SCA	61.657	8.6	6-7-6	NE	E	1854	2085	2277	1.7	2.3	-34-6
HANSEBREEN	322	NO2085	SCA	61.75	5.68	X-X-X	NE	N	1310	1150	927	2.8	2.5	-34-6
HAUGABREEN	4568	NO2298	SCA	61.687	6.716	X-X-X						9.9		2----
HELLSTUGUBREEN	300	NO2768	SCA	61.56	8.44	5-1-8	N	N	1487	1900	2213	2.7	3.4	234-6
JUVFONNE	3661	NO2597	SCA	61.677	8.351	X-X-X			1985	1903	1852	0.2	0.3	2----
KOLDEDALSBREEN	20253	2734	SCA	61.349	8.141	X-X-X	NE	NE				0.7		2----
KOPPANGSBREEN	2309	NO0205	SCA	69.689	20.147	X-X-X						4.1		2----
LANGFJORDJOEKELEN	323	NO0054	SCA	70.128	21.735	4-3-8	SE	E	1050	850	338	2.6	4.2	234-6
LEIRBREEN	301	NO0548	SCA	61.57	8.1	X-X-X	NW	NW	2070		1530	4.7	3.8	2----
MIDTDALSBREEN	2295	NO2964	SCA	60.57	7.47	4-3-8	NE	NE	1862	1730	1380	6.7		2----
MJOELKEDALSBREEN	4508	NO2717	SCA	61.43	8.201	X-X-X			1937	1741	1384	3.2	3.3	2----
NIGARDSBREEN	290	NO31014	SCA	61.72	7.13	4-3-8	SE	SE	1952	1627	330	46.6	9.6	234-6
REMBESDALSKAAKA	2296	NO2968	SCA	60.539	7.368	4-3-8	W	W	1854	1735	1066	17.1	8.1	234-6
RUNDVASSBREEN	2670	NO0941	SCA	67.299	16.057	4-X-X	NE	N	1525	1265	853	10.8		2----
SKJELAATINDBREEN	10424	NO1272	SCA	66.727	14.449	X-X-X	E	E				3.1		2----
STEGHOLTBREEN	313	NO31021	SCA	61.801	7.314	4-3-8	S	S	1900	1480	880	12.5	7.7	2----
STEINDALSBREEN	2310		SCA	69.393	19.902	X-X-X	E	E				5.1		2----
STORBREEN	302	NO2636	SCA	61.57	8.13	5-2-6	NE	NE	1420	1775	2091	4.9	2.9	234-6
STORJUVBREEN	2308	NO2614	SCA	61.647	8.292	X-X-X	N	N				4.5		2----
STORSTEINSFJELLBREEN	1329	NO0675	SCA	68.22	17.92	5-2-8	E	SE	1850	1380	969	5.9	5.3	2----
STYGGEBREAN	4504	NO2608	SCA	61.645	8.341	5-1-X			2415	2034	1665	4.9	4	2----
STYGGEDALSBREEN	303	NO30720	SCA	61.473	7.885	5-2-6	N	N	2240	1650	1270	2	3.2	2----
SVELGJABREEN	3343	NO3137	SCA	59.945	6.283	X-X-X	SW	SW	1632	1375	829	22.3		2----
SYDBREEN	3351		SCA	69.45	19.91	5-2-8	NE	E				4.3		2----
TROLLBERGDALSBREEN	316	NO68507	SCA	66.716	14.441	5-3-8	SE	SE	1300	1050	907	1.8	2.1	2----
TROLLKYRKJEBREEN	3606		SCA	62.288	7.459	X-X-X	NE	NE				1		2----
TUFTEBREEN	3352		SCA	61.67	7.14	4-3-8	E	SE				6.8		2----
VETLE SUPPHELLEBREEN	3607		SCA	61.522	6.836	X-X-X	SE	S				7.3		2----
NP - Nepal														
MERA	3996		ASE	27.72	86.885	5-0-6	NE	N	6390	5615	4910	5.1	4.6	-3--6
POKALDE	3997		ASE	27.9	86.8	5-4-8	N	N	5690	5580	5430	0.1	0.5	-3---
RIKHA SAMBA	1516	NP0012	ASE	28.82	83.49	5-3-8	S	SE	6515	5826	5416	5.8	5.4	-3456
WEST CHANGRI NUP	10401		ASE	27.982	86.777	5-4-8	NE	SE	5690	5507	5330	0.9	1.4	-3--6
YALA	912	NP0004	ASE	28.236	85.618	6-3-6	SW	SW	5661	5372	5168	1.6	1.4	-3456
NZ - New Zealand														
BREWSTER	1597		NZL	-44.07	169.43	6-3-8	SW	SW	2399	2023	1676	2	2.7	23--6
FOX / TE MOEKA O TUAWE	1536		NZL	-43.53	170.15	5-2-8	NW	W	3500	1900	305	34.7	12.6	2----
FRANZ JOSEF / KA ROIMATA O HINE HUKATERE	899		NZL	-43.5	170.22	5-2-8	NW	NW	2955	1690	425	33.1	10.5	2----
ROLLESTON	1538		NZL	-42.89	171.526	6-4-6	SE	SE	1900	1795	1700	0.1	0.4	-345-
PE - Peru														
ARTESONRAJU	3292	PE0003	TRP	-8.95	-77.62	5-3-4	W	W	5400	5050	4700	3.6	3.4	234--
GAJAP-YANACARCO	223	PE0009	TRP	-9.83	-77.17	6-3-4	SE	SE	5200	5033	4958	1.2	0.8	2----
PASTORURI	224	PE0008	TRP	-9.9	-77.17	6-3-0	NW	NW	5100	5095	5061	1.2	0.3	2----
SHALLAP	3293	PE0003	TRP	-9.48	-77.33	5-2-4	NW	NW	5974	4873	4765		2.9	2----
URUASHRAJU	221	PE0005	TRP	-9.58	-77.32	5-3-0	SW	SW	5650	5006	4689	2.1	2	2----
YANAMAREY	226	PE0004	TRP	-9.653	-77.271	5-2-0	SW	SW	5200	4961	4720	0.2	1.3	234-6
RU - Russia														
DJANKUAT	726	RU3010	CAU	43.194	42.761	5-2-9	N	NW	3670	3280	2738	2.3	3.4	23-56
GARABASHI	761	RU3031	CAU	43.3	42.47	0-0-3	SE	S	4823	4064	3305	3.9	5.1	234-6
LEVIY AKTRU	794	RU7102	ASN	50.082	87.692	5-1-6	E	E	3984	3293	2600	5.4	5.6	-345-
SE - Sweden														
ISFALLSGLACIAEREN	333	SE0787	SCA	67.915	18.568	5-3-6	E	E	1700		1250	1.4	1.9	2----
KARSOJIETNA	330	SE0798	SCA	68.358	18.321	5-3-8	NE	E	1500	1100	960	1.2	1.6	2----
KASKASATJ SE	329	SE0789	SCA	67.938	18.603	5-3-6	SE	S	1890	1560	1440	0.6	1	2----
MARMAGLACIAEREN	1461	SE0799	SCA	68.08	18.68	5-2-1	E	E	1740		1320	3.3	3.3	-34-6
MIKKAJEKNA	338	SE0766	SCA	67.415	17.693	5-1-8	S	S	1825		1000	6.7	3.7	2----
PARTEJEKNA	327	SE0763	SCA	67.17	17.67	5-2-8	E	E	1800		1100	9.9	4.8	2----
RABOTS GLACIAER	334	SE0785	SCA	67.91	18.5	5-2-8	NW	W	1930		1080	3.1	3.7	234-6
RIUKOJIETNA	342	SE0790	SCA	68.084	18.054	3-0-3	E	E	1440		1140	2.6	2.3	-34-6
SALAJEKNA	341	SE0759	SCA	67.12	16.38	5-2-8	SE	S	1580		900	27.9	8.6	2----
STORGLACIAEREN	332	SE0788	SCA	67.903	18.568	5-2-8	E	E	1720		1160	2.9	3.4	23456
SUOTTASJEKNA	336	SE0768	SCA	67.47	17.58	5-2-8	NE	N	1800		1130	7.2	3.7	2----
SJ - Svalbard (Norway)														
AUSTRE BROEGGERBREEN	292	SJ15504	SJM	78.888	11.831	5-2-9	NW	N	600	260	50	6.1	6	-3--6
AUSTRE LOVENBREEN	3812		SJM	78.871	12.154	5-2-2	N	N	550	326	103	4.3	3.8	23--6
GROENFJORD E	3947		SJM	77.895	14.361	5-2-8	N	NE	550	320	70	6.2	5.8	-345-
HANSBREEN	306	SJ12419	SJM	77.077	15.63	4-2-4	S	S	510	255	0	56.7	15	234-6
IRENEBREEN	2669	SJ15402	SJM	78.665	12.125	X-X-X	NW	SW	650	340	125	3.6	3.9	-3--6
KONGSVEGEN	1456	SJ15510	SJM	78.8	12.98	4-2-4	NW	NW	1050	500	0	101.9	27	-3-56
KRONEBREEN	3504	SJ15511	SJM	78.967	13.183	4-2-4	S	W	1361		0	370		-3--6
MIDTRE LOVENBREEN	291	SJ15506	SJM	78.881	12.048	5-2-9	NE	N	650	330	50	5.4	4.8	-3--6
NORDENSKIOELDBREEN	3479	SJ14506	SJM	78.7	17.183	4-2-4	SW	W	1201	703	0	202		-3-56
SVENBREEN	8380		SJM	78.727	16.278	X-X-X			754	465	155	4.5	4	-3---
WALDEMARBREEN	2307	SJ15403	SJM	78.677	12.069	5-3-8	NW	SW	570	320	100	2.1	3.3	-3456
WERENSKIOLDBREEN	305	SJ12501	SJM	77.067	15.367	5-2-1	S	SW	750	400	40	27.1	8.8	-34-6

GLACIER_NAME	WGMS_ID	PSFG_NR	REGION	LAT	LON	CODE	EXP_ACC	EXP_ABL	ELEV_MAX	ELEV_MED	ELEV_MIN	AREA	LEN	DATA_TYPE
TJ - Tajikistan														
EAST ZULMART (GLACIER NO 139)	13493		ASC	38.863	72.999	5-3-8	NE	N	5470	4900	4600	3.7	3.9	-3456
US - United States of America														
BOULDER	1364	US2005	WNA	48.77	-121.796	5-3-8	SE	E	3230	2230	1550		3.6	2----
COLEMAN	1369	US2011	WNA	48.783	-121.842	6-3-8	NW	NW	3260		1230		4.5	2----
COLUMBIA (2057)	76	US2057	WNA	47.964	-121.349	6-4-8	S	S	1725	1600	1450	0.7	1.5	234--
DANIELS	83	US2052	WNA	47.57	-121.17	6-3-6	NE	NE	2300	2200	2075	0.3	0.6	-3---
DEMING	1368	US2009	WNA	48.766	-121.83	X-X-0	SW	SW	3230	2250	1340		5.2	2----
EASTON	1367	US2008	WNA	48.759	-121.825	5-3-8	SW	S	2900	2200	1650	2.7	4	234--
GULKANA	90	US0200	ALA	63.281	-145.427	5-2-9	S	SW	2459	1876	1217	15.1	7.1	-3-56
ICE WORM	82	US2054	WNA	47.55	-121.17	6-4-8	E	E	2070	2010	1900	0.1	0.5	-3---
LEMON CREEK	3334		ALA	58.387	-134.346	5-3-8	N	NW	1494	1100	663	9.9	6.1	-3-56
LOWER CURTIS	77	US2055	WNA	48.826	-121.622	6-4-8	W	W	1850	1630	1490	0.5	0.7	23---
LYNCH	81	US2056	WNA	47.57	-121.18	6-5-4	N	N	2300	2185	1900	0.5	1	-3---
RAINBOW	79	US2003	WNA	48.8	-121.77	6-3-8	E	E	2040	1750	1340	1.4	1.9	234--
SHOLES	3295		WNA	48.814	-121.77	X-X-X	NE	NE	1960	1820	1690	0.7	0.9	23---
SOUTH CASCADE	205	US2013	WNA	48.35	-121.055	5-3-8	N	N	2135	1920	1626	1.8	2.4	-3-56
SPERRY	218	US5001	WNA	48.62	-113.758	6-4-8	NW	NW	2789	2430	2261	0.8	1.2	-3-56
TAKU	124	US1805	ALA	58.651	-134.278	4-2-2	SE	S	2133	1347	0	724.8	54.6	23-56
WOLVERINE	94	US0411	ALA	60.417	-148.904	5-3-8	S	S	1674	1286	453	15.4	6.3	-3-56
YAWNING	75	US2050	WNA	48.447	-121.031	6-5-8	NE	NE	2100	1970	1880	0.2	0.7	-3---

APPENDIX - Table 2

VARIATIONS IN GLACIER FRONT POSITIONS 2018–2019

PU	Political unit, alphabetic 2-digit country code (cf. www.iso.org)	
GLACIER NAME	Name of the glacier in capital letters, cf. Appendix Table 1	
WGMS ID	Key identifier of the glacier, cf. Appendix Table 1	
FROM	Reference date of the survey, in the format YYYYMMDD*	
TO	Survey date, in the format YYYYMMDD*	
METHOD	Survey platform and method given by alphabetic 2 digit code	
	Platform (1st digit, lower case):	Method (2nd digit, upper case):
	t: terrestrial	R: reconstructed (e.g., historical sources)
	a: airborne	M: derived from maps
	s: spaceborne	G: ground survey (e.g., GPS, tachymetry, tape)
	c: combined	P: photogrammetry
	x: unknown	L: laser altimetry or scanning
		Z: radar altimetry or scanning
		C: combined
		X: other
FV	Variation in metres in the position of the glacier front in horizontal projection between reference and survey date	
	Qualitative variations are expressed by the following symbols:	
	+X: glacier in advance	
	-X: glacier in retreat	
	ST: glacier stationary	
	SN: glacier front covered by snow	
INVESTIGATORS (SPONS_AGENCY)	Names of the investigators and their sponsoring agencies (cf. Section 8)	

*Unknown month or day are each replaced by „99“

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
AR - Argentina							
AR	DE LOS TRES	1675	20150213	20180324	tG	-38	Popovnin V. (MSU)
AR	DE LOS TRES	1675	20180324	20190330	tG	-68	Popovnin V. (MSU)
AT - Austria							
AT	ALPEINER F.	497	20170929	20180912	tG	-86	Stocker-Waldhuber M. (ÖAV)
AT	ALPEINER F.	497	20180912	20190913	tG	-43	Stocker-Waldhuber M. (ÖAV)
AT	BACHFALLEN F.	500	20170908	20180905	tG	-27	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	BACHFALLEN F.	500	20180905	20190831	tG	-14	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	BAERENKOPF K.	567	20171021	20180831	tG	-5	Seitlinger G. (ÖAV)
AT	BAERENKOPF K.	567	20180831	20190929	tG	-87	Seitlinger G. (ÖAV)
AT	BERGLAS F.	496	20170929	20180912	tG	-18	Stocker-Waldhuber M. (ÖAV)
AT	BERGLAS F.	496	20180912	20190913	tG	-38	Stocker-Waldhuber M. (ÖAV)
AT	BIELTAL F.	481	20170908	20180904	tG	-7	Groß G. (ÖAV)
AT	BIELTAL F.	481	20180904	20190831	tG	-9	Groß G. (ÖAV)
AT	BRENNKOGL K.	528	20170829	20180821	tG	-6	Seitlinger G. (ÖAV)
AT	BRENNKOGL K.	528	20180821	20190911	tG	-9	Seitlinger G. (ÖAV)
AT	DAUNKOGEL F.	604	20170930	20180918	tG	-30	Stocker-Waldhuber M. (ÖAV)
AT	DAUNKOGEL F.	604	20180918	20190917	tG	-20	Stocker-Waldhuber M. (ÖAV)
AT	DIEM F.	513	20171017	20181013	tG	-45	Schöpf R. (ÖAV)
AT	DIEM F.	513	20181013	20191006	tG	-31	Schöpf R. (ÖAV)
AT	EISKAR G.	1632	20170909	20180908	tG	0	Hohenwarter G. (ÖAV)
AT	EISKAR G.	1632	20180908	20190914	tG	-3	Hohenwarter G. (ÖAV)
AT	FERNAU F.	601	20170930	20180918	tG	-3	Stocker-Waldhuber M. (ÖAV)
AT	FERNAU F.	601	20180918	20190917	tG	-6	Stocker-Waldhuber M. (ÖAV)
AT	FIRMISAN F.	4337	20170908	20180917	tG	-9	Strudl M. (ÖAV)
AT	FIRMISAN F.	4337	20180917	20190903	tG	-4	Strudl M. (ÖAV)
AT	FREIWAND K.	564	20170911	20180910	tG	-7	Lieb G. (ÖAV), Kellerer-Pirklbauer A. (ÖAV)
AT	FREIWAND K.	564	20180910	20190911	tG	-6	Lieb G. (ÖAV), Kellerer-Pirklbauer A. (ÖAV)
AT	FROSNITZ K.	579	20171016	20180923	tG	-29	Lang J. (ÖAV)
AT	FROSNITZ K.	579	20180923	20190918	tG	-7	Lang J. (ÖAV)
AT	FURTSCHAGL K.	585	20171019	20180912	tG	-X	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	FURTSCHAGL K.	585	20180912	20190904	tG	-X	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	GAISKAR F.	530	20170929	20180909	tG	-7	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	GAISKAR F.	530	20180909	20190831	tG	-7	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	GAISSBERG F.	508		20180917	tG	-X	Patzelt G. (ÖAV)
AT	GAISSBERG F.	508	20180917	20190905	tG	-7	Fischer A. (ÖAV)
AT	GEPATSCH F.	522	20171005	20180920	tG	-40	Noggler B. (ÖAV)
AT	GEPATSCH F.	522	20180920	20190915	tG	-30	Noggler B. (ÖAV)
AT	GOESSNITZ K.	532	20170908	20180923	tG	-27	Krobath M. (ÖAV)
AT	GOESSNITZ K.	532	20180923	20190920	tG	-7	Krobath M. (ÖAV)
AT	GOLDBERG K.	1305	20171005	20180920	tG	-4	Binder D. (ÖAV)
AT	GOLDBERG K.	1305	20180920	20190920	tG	-6	Binder D. (ÖAV)
AT	GR. GOSAU G.	536	20170908	20180919	tG	-11	Reingruber K. (ÖAV)
AT	GR. GOSAU G.	536	20180919	20190913	tG	-18	Reingruber K. (ÖAV)
AT	GROSSELEND K.	542	20170827	20180828	tG	-5	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	GROSSELEND K.	542	20180828	20190826	tG	-4	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	GRUENAU F.	599	20170930	20180918	tG	-5	Stocker-Waldhuber M. (ÖAV)
AT	GRUENAU F.	599	20180918	20190917	tG	-7	Stocker-Waldhuber M. (ÖAV)
AT	GURGLER F.	511		20180918	tG	-X	Patzelt G. (ÖAV)
AT	GURGLER F.	511	20180918	20190920	tG	-13	Fischer A. (ÖAV)
AT	GUSLAR F.	490	20170816	20180822	tG	-20	Stocker-Waldhuber M. (ÖAV)
AT	GUSLAR F.	490	20180822	20190823	tG	-10	Stocker-Waldhuber M. (ÖAV)
AT	HALLSTAETTER G.	535	20170901	20180905	tG	-6	Reingruber K. (ÖAV)
AT	HALLSTAETTER G.	535	20180905	20190823	tG	-11	Reingruber K. (ÖAV)
AT	HAUER F.	10458	20170930	20181016	tG	-19	Schöpf R. (ÖAV)
AT	HAUER F.	10458	20181016	20190824	tG	-2	Schöpf R. (ÖAV)
AT	HINTEREIS F.	491	20170817	20180821	tG	-26	Stocker-Waldhuber M. (ÖAV)
AT	HINTEREIS F.	491	20180821	20190820	tG	-X	Stocker-Waldhuber M. (ÖAV)
AT	HOCHALM K.	538	20170827	20180827	tG	-3	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	HOCHALM K.	538	20180827	20190825	tG	-2	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	HOCHJOCH F.	492	20170814	20180824	tG	-34	Stocker-Waldhuber M. (ÖAV)
AT	HOCHJOCH F.	492	20180824	20190821	tG	-6	Stocker-Waldhuber M. (ÖAV)
AT	HORN K. (SCHOB.)	531	20170908	20180923	tG	-8	Krobath M. (ÖAV)
AT	HORN K. (SCHOB.)	531	20180923	20190920	tG	-5	Krobath M. (ÖAV)
AT	HORN K. (ZILLER)	589	20170927	20180915	tG	-21	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	HORN K. (ZILLER)	589	20180915	20190914	tG	-5	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	INN. PIRCHLKAR	505	20170917	20180930	tG	-8	Schöpf R. (ÖAV)
AT	INN. PIRCHLKAR	505	20180930	20191001	tG	-5	Schöpf R. (ÖAV)
AT	JAMTAL F.	480	20170829	20180912	tG	-14	Groß G. (ÖAV)
AT	JAMTAL F.	480	20180912	20190904	tG	-9	Groß G. (ÖAV)
AT	KAELBERSPITZ K.	540	20170829	20180829	tG	-5	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	KAELBERSPITZ K.	540	20180829	20190827	tG	-5	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	KALSER BAERENKOPF K.	2676	20170830	20180905	tG	-3	Seitlinger G. (ÖAV)
AT	KALSER BAERENKOPF K.	2676	20180905	20190901	tG	-3	Seitlinger G. (ÖAV)
AT	KARLINGER K.	568	20171021	20180831	tG	-10	Seitlinger G. (ÖAV)
AT	KARLINGER K.	568	20180831	20190929	tG	-72	Seitlinger G. (ÖAV)
AT	KESSELWAND F.	507	20170817	20180823	tG	-X	Stocker-Waldhuber M. (ÖAV)
AT	KESSELWAND F.	507	20180823	20190822	tG	-X	Stocker-Waldhuber M. (ÖAV)
AT	KLEINEISER K.	555		20180822	tG	-X	Seitlinger G. (ÖAV)
AT	KLEINEISER K.	555	20180822	20190917	tG	-5	Seitlinger G. (ÖAV)
AT	KLEINELEND K.	541	20170829	20180828	tG	-4	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	KLEINELEND K.	541	20180828	20190827	tG	1	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	KLEINFLEISS K.	547	20171005	20180919	tG	-5	Binder D. (ÖAV)
AT	KLEINFLEISS K.	547	20180919	20190919	tG	0	Binder D. (ÖAV)
AT	KLOSTERTALER M	485	20170928	20180905	tG	-7	Groß G. (ÖAV)
AT	KLOSTERTALER M	485	20180905	20190914	tG	-9	Groß G. (ÖAV)
AT	KRIMMLER K.	584	20171015	20180906	tG	-7	Luzian R. (ÖAV)
AT	KRIMMLER K.	584	20180906	20190831	tG	-14	Luzian R. (ÖAV)
AT	LANDECK K.	569	20170831	20180919	tG	-8	Seitlinger G. (ÖAV)
AT	LANDECK K.	569	20180919	20190928	tG	ST	Seitlinger G. (ÖAV)
AT	LANGTALER F.	510		20180918	tG	-X	Patzelt G. (ÖAV)
AT	LANGTALER F.	510	20180918	20190920	tG	-9	Fischer A. (ÖAV)
AT	LATSCH F.	4338	20170908	20180917	tG	-9	Strudl M. (ÖAV)
AT	LATSCH F.	4338	20180917	20190903	tG	-3	Strudl M. (ÖAV)
AT	MARZELL F.	515		20180902	tG	-X	Schöpf R. (ÖAV)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
AT	MARZELL F.	515	20180902	20191025	tG	-9	Schöpf R. (ÖAV)
AT	MAURER K. (GLO.)	558		20180828	tG	-X	Seitlinger G. (ÖAV)
AT	MAURER K. (GLO.)	558	20180828	20190917	tG	2	Seitlinger G. (ÖAV)
AT	MUTMAL F.	506		20180903	tG	-X	Schöpf R. (ÖAV)
AT	MUTMAL F.	506	20180903	20191025	tG	-8	Schöpf R. (ÖAV)
AT	NIEDERJOCH F.	516		20180904	tG	-X	Schöpf R. (ÖAV)
AT	NIEDERJOCH F.	516	20180904	20191012	tG	-6	Schöpf R. (ÖAV)
AT	OBERSULZBACH K.	583		20180910	tG	-X	Luzian R. (ÖAV)
AT	OBERSULZBACH K.	583	20180910	20190929	tG	-X	Luzian R. (ÖAV)
AT	OCHSENTALER G.	483	20170908	20180905	tG	-16	Groß G. (ÖAV)
AT	OCHSENTALER G.	483	20180905	20190914	tG	-87	Groß G. (ÖAV)
AT	OEDENWINKEL K.	559	20170827	20180905	tG	-5	Zagel B. (ÖAV)
AT	OEDENWINKEL K.	559	20180905	20190829	tG	-11	Zagel B. (ÖAV)
AT	PASTERZE	566	20170914	20180912	tG	-32	Lieb G. (ÖAV), Kellerer-Pirklbauer A. (ÖAV)
AT	PASTERZE	566	20180911	20190912	tG	-60	Lieb G. (ÖAV), Kellerer-Pirklbauer A. (ÖAV)
AT	PFAFFEN F.	591	20170929	20180909	tG	-X	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	PFAFFEN F.	591	20180909	20190831	tG	-3	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	RETTENBACH F.	488	20170914	20180908	tG	-6	Schöpf R. (ÖAV)
AT	RETTENBACH F.	488	20180908	20190916	tG	-11	Schöpf R. (ÖAV)
AT	ROFENKAR F.	518	20170923	20180911	tG	-2	Schöpf R. (ÖAV)
AT	ROFENKAR F.	518	20180911	20190905	tG	-6	Schöpf R. (ÖAV)
AT	ROTER KNOPF K.	3297	20170908	20180923	tG	0	Krobath M. (ÖAV)
AT	ROTER KNOPF K.	3297	20180923	20190920	tG	0	Krobath M. (ÖAV)
AT	ROTMOOS F.	509		20180919	tG	-X	Patzelt G. (ÖAV)
AT	ROTMOOS F.	509	20180919	20190905	tG	-X	Fischer A. (ÖAV)
AT	SCHALF F.	514		20180903	tG	-X	Schöpf R. (ÖAV)
AT	SCHLADMINGER G.	534	20171002	20180927	tG	-6	Reingruber K. (ÖAV)
AT	SCHLADMINGER G.	534	20180927	20190904	tG	-7	Reingruber K. (ÖAV)
AT	SCHLATEN K.	580	20170905	20180905	tG	-67	Luzian R. (ÖAV)
AT	SCHLATEN K.	580	20180905	20190914	tG	-23	Luzian R. (ÖAV)
AT	SCHLEGEIS K.	586	20171019	20180912	tG	-X	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	SCHLEGEIS K.	586	20180912	20190904	tG	-X	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	SCHMIEDINGER K.	548	20171020	20180824	tG	-33	Seitlinger G. (ÖAV)
AT	SCHMIEDINGER K.	548	20180824	20190911	tG	-16	Seitlinger G. (ÖAV)
AT	SCHNEEGLOCKEN	525	20170908	20180905	tG	-13	Groß G. (ÖAV)
AT	SCHNEEGLOCKEN	525	20180905	20190920	tG	-15	Groß G. (ÖAV)
AT	SCHNEELOCH G.	533	20170908	20180918	tG	-8	Reingruber K. (ÖAV)
AT	SCHNEELOCH G.	533	20180918	20190913	tG	-4	Reingruber K. (ÖAV)
AT	SCHWARZENBERG F.	501	20170929	20180916	tG	-16	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	SCHWARZENBERG F.	501	20180916	20190915	tG	-4	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	SCHWARZENSTEIN	588	20170927	20180917	tG	-X	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	SCHWARZENSTEIN	588	20180917	20190915	tG	-X	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	SCHWARZKARL K.	556		20180822	tG	-X	Seitlinger G. (ÖAV)
AT	SCHWARZKARL K.	556	20180822	20190917	tG	-8	Seitlinger G. (ÖAV)
AT	SCHWEIKERT F.	4336	20170909	20180905	tG	-16	Strudl M. (ÖAV)
AT	SCHWEIKERT F.	4336	20180905	20190831	tG	-86	Strudl M. (ÖAV)
AT	SEEKARLES F.	10459	20170922	20180923	tG	-20	Strudl M. (ÖAV)
AT	SEEKARLES F.	10459	20180923	20190920	tG	-7	Strudl M. (ÖAV)
AT	SEXEGERTEN F.	520	20170928	20180905	tG	-10	Noggler B. (ÖAV)
AT	SEXEGERTEN F.	520	20180905	20190919	tG	-5	Noggler B. (ÖAV)
AT	SIMONY K.	575	20170904	20180829	tG	0	Lang J. (ÖAV)
AT	SIMONY K.	575	20180829	20190917	tG	0	Lang J. (ÖAV)
AT	SPIEGEL F.	512	20171017	20181011	tG	-10	Schöpf R. (ÖAV)
AT	SPIEGEL F.	512	20181011	20191006	tG	-4	Schöpf R. (ÖAV)
AT	STUBACHER SONNBLICK K.	573	20170829	20180823	tG	0	Seitlinger G. (ÖAV)
AT	STUBACHER SONNBLICK K.	573	20180823	20190827	tG	-3	Seitlinger G. (ÖAV)
AT	SULZTAL F.	503	20170929	20180916	tG	-12	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	SULZTAL F.	503	20180916	20190915	tG	-12	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	TASCHACH F.	519	20170928	20180905	tG	-28	Noggler B. (ÖAV)
AT	TASCHACH F.	519	20180905	20190919	tG	-10	Noggler B. (ÖAV)
AT	TOTENFELD	524	20170829	20180912	tG	-12	Groß G. (ÖAV)
AT	TOTENFELD	524	20180912	20190904	tG	-9	Groß G. (ÖAV)
AT	TOTENKOPF K.	2680	20170830	20180905	tG	-6	Seitlinger G. (ÖAV)
AT	TOTENKOPF K.	2680	20180905	20190831	tG	-2	Seitlinger G. (ÖAV)
AT	TRIEBENKARLAS F.	592	20171020	20180909	tG	-29	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	TRIEBENKARLAS F.	592	20180909	20190831	tG	-28	Dünser F. (ÖAV), Janz B. (ÖAV)
AT	UMBAL K.	574	20170906	20180829	tG	-24	Lang J. (ÖAV)
AT	UMBAL K.	574	20180829	20190916	tG	-22	Lang J. (ÖAV)
AT	UNT. RIFFL K.	605	20170831	20180908	tG	-17	Zagel B. (ÖAV)
AT	UNT. RIFFL K.	605	20180908	20190901	tG	-6	Zagel B. (ÖAV)
AT	UNTERSULZBACH K.	582	20170802	20180910	tG	-53	Luzian R. (ÖAV)
AT	UNTERSULZBACH K.	582	20180910	20190915	tG	-22	Luzian R. (ÖAV)
AT	VERBORGENBERG F.	593	20170929	20180912	tG	-10	Stocker-Waldhuber M. (ÖAV)
AT	VERBORGENBERG F.	593	20180912	20190913	tG	-9	Stocker-Waldhuber M. (ÖAV)
AT	VERMUNT G.	482	20170908	20180904	tG	-18	Groß G. (ÖAV)
AT	VERMUNT G.	482	20180904	20190914	tG	-13	Groß G. (ÖAV)
AT	VERNAGT F.	489	20170816	20180822	tG	-18	Stocker-Waldhuber M. (ÖAV)
AT	VERNAGT F.	489	20180822	20190823	tG	-12	Stocker-Waldhuber M. (ÖAV)
AT	VILTRAGEN K.	581	20170905	20180905	tG	-128	Luzian R. (ÖAV)
AT	VILTRAGEN K.	581	20180905	20190914	tG	-27	Luzian R. (ÖAV)
AT	W. TRIPP K.	539	20170830	20180829	tG	-2	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	W. TRIPP K.	539	20180829	20190826	tG	-1	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	WASSERFALLWINKL	565	20170913	20180911	tG	-14	Lieb G. (ÖAV), Kellerer-Pirklbauer A. (ÖAV)
AT	WASSERFALLWINKL	565	20180911	20190912	tG	-11	Lieb G. (ÖAV), Kellerer-Pirklbauer A. (ÖAV)
AT	WAXEGG K.	590	20170928	20180916	tG	-11	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	WAXEGG K.	590	20180916	20190915	tG	-7	Friedrich R. (ÖAV), Friedrich C. (ÖAV), Friedrich M. (ÖAV)
AT	WEISSEE F.	523	20171005	20180920	tG	-35	Noggler B. (ÖAV)
AT	WEISSEE F.	523	20180920	20190915	tG	-50	Noggler B. (ÖAV)
AT	WILDGERLOS	587	20170908	20180916	tG	-13	Nussbaumer S. (ÖAV)
AT	WILDGERLOS	587	20180916	20190914	tG	-4	Nussbaumer S. (ÖAV)
AT	WINKL K.	537	20170830	20180830	tG	SN	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	WINKL K.	537	20180830	20190928	tG	SN	Knittel A. (ÖAV), Färber J. (ÖAV)
AT	WURTEN K.	545	20171019	20180918	tG	-13	Neureiter A. (ZAMG), Weyss G. (ZAMG)
AT	WURTEN K.	545	20180918	20191010	tG	-5	Weyss G. (ZAMG), Höfler A. (ZAMG)
AT	ZETTALUNITZ/MULLWITZ K.	578	20170904	20180903	tG	-16	Lang J. (ÖAV)
AT	ZETTALUNITZ/MULLWITZ K.	578	20180903	20190917	tG	-24	Lang J. (ÖAV)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
BO - Bolivia							
BO	ZONGO	1503	20170927	20181003	tG	-8	Soruco A. (UMSA), Rabatel A. (IGE), Sicart J. (UG/IRD), Condom T. (UG/IRD), Ginot P. (UG/IRD)
CA - Canada							
CA	CONRAD	10498	20170917	20181014	aL	-37	Pelto B. (BCHydro)
CA	CONRAD	10498	20181014	20190826	aL	-15	Pelto B. (BCHydro)
CA	ILLECILLEWAET	1400	20170917	20181016	aL	-11	Pelto B. (BCHydro)
CA	ILLECILLEWAET	1400	20181016	20190826	aL	-16	Pelto B. (BCHydro)
CA	KOKANEE	23	20170916	20181014	aL	-5	Pelto B. (BCHydro)
CA	KOKANEE	23	20181014	20190826	aL	-11	Pelto B. (BCHydro)
CA	NORDIC	10497	20170927	20181014	aL	-12	Pelto B. (BCHydro)
CA	NORDIC	10497	20181014	20190826	aL	-25	Pelto B. (BCHydro)
CA	ZILLMER	10496	20171103	20180930	aL	-15	Pelto B. (BCHydro)
CH - Switzerland							
CH	ALBIGNA	1674	20171007	20180823	tG	-14	Keiser M. (GR-Forest)
CH	ALBIGNA	1674	20180823	20190905	t	-13	Keiser M. (GR-Forest)
CH	ALLALIN	394	20171005	20180911	aP	-7	Bauder A. (VAW)
CH	ALLALIN	394	20180911	20190921	a	-2	Bauder A. (VAW)
CH	ALPETLI (KANDER)	439	20170913	20180921	tG	-34	Burgener U. (BE-Forest)
CH	ALPETLI (KANDER)	439	20180921	20190920	t	-26	Burgener U. (BE-Forest)
CH	AMMERTEN	435	20171007	20180902	tG	-2	Hodel W. (private)
CH	AMMERTEN	435	20180902	20190921	t	-3	Hodel W. (private)
CH	AROLLA (BAS)	377	20171010	20180920	tG	-17	Fellay F. (VS-Forest)
CH	AROLLA (BAS)	377	20180920	20190927	t	-33	Fellay F. (VS-Forest)
CH	BASODINO	463	20170919	20180903	tG	-10	Soldati M. (TI-Forest)
CH	BASODINO	463	20180903	20190917	t	-6	Soldati M. (TI-Forest)
CH	BIFERTEN	422	20170930	20180915	tG	-6	Klauser H. (private)
CH	BIFERTEN	422	20180915	20190914	t	-22	Klauser H. (private)
CH	BLUEMLISALP	436	20170927	20180928	tG	-18	Burgener U. (BE-Forest)
CH	BLUEMLISALP	436	20180928	20191001	t	-9	Burgener U. (BE-Forest)
CH	BOVEYRE	459	20170915	20180919	tG	-10	Médico J. (VS-Forest)
CH	BOVEYRE	459	20180919	20191004	t	-17	Stoebener P. (VS-Forest)
CH	BRENEY	368	20170824	20180904	tG	-22	Chabloz J. (private)
CH	BRESCIANA	465	20170929	20180907	tG	-3	Soldati M. (TI-Forest)
CH	BRESCIANA	465	20180907	20191003	t	-3	Soldati M. (TI-Forest)
CH	BRUNEGG	384	20171002	20181011	tG	-137	Brigger A. (VS-Forest)
CH	BRUNEGG	384	20181011	20191001	t	-11	Brigger A. (VS-Forest)
CH	BRUNNI	427	20170825	20180904	tG	-1	Planzer M. (UR-Forest)
CH	BRUNNI	427	20180904	20190920	t	-7	Planzer M. (UR-Forest)
CH	CALDERAS	403	20170828	20180820	tG	-9	Godly G. (GR-Forest)
CH	CALDERAS	403	20180820	20191001	t	-13	Godly G. (GR-Forest)
CH	CAMBRENA	399	20171018	20181018	tG	-130	Berchier G. (GR-Forest)
CH	CAMBRENA	399	20181018	20190927	t	-12	Berchier G. (GR-Forest)
CH	CAVAGNOLI	464	20170925	20180904	tG	-13	Soldati M. (TI-Forest)
CH	CAVAGNOLI	464	20180904	20190918	t	-11	Soldati M. (TI-Forest)
CH	CHEILLON	375	20171013	20180921	tG	-12	Bourdin O. (VS-Forest)
CH	CHEILLON	375	20180921	20190913	t	-12	Tremp S. (VS-Forest)
CH	CORNO	468	20171009	20180917	tG	-2	Soldati M. (TI-Forest)
CH	CORNO	468	20180917	20190926	t	-3	Soldati M. (TI-Forest)
CH	CROSLINA	1681	20170920	20180906	tG	-3	Soldati M. (TI-Forest)
CH	CROSLINA	1681	20180906	20191010	t	0	Soldati M. (TI-Forest)
CH	DAMMA	429	20171005	20181004	tG	-7	Planzer M. (UR-Forest)
CH	DAMMA	429	20181004	20191011	t	-10	Planzer M. (UR-Forest)
CH	EIGER	442	20170914	20180919	tG	-19	Schai R. (BE-Forest)
CH	EIGER	442	20180919	20190927	t	-13	Schai R. (BE-Forest)
CH	EN DARREY	374	20101012	20180921	tG	-18	Bourdin O. (VS-Forest)
CH	EN DARREY	374	20180921	20190913	t	-7	Tremp S. (VS-Forest)
CH	FEE NORTH	392	20171005	20180928	tG	0	Andenmatten U. (VS-Forest)
CH	FEE NORTH	392	20171005	20191011	t	46	Andenmatten U. (VS-Forest)
CH	FERPECLE	379	20171012	20181005	tG	-24	Fellay F. (VS-Forest)
CH	FERPECLE	379	20181005	20191014	t	-17	Fellay F. (VS-Forest)
CH	FINDELEN	389	20170905	20180811	aP	-12	Bauder A. (VAW)
CH	FINDELEN	389	20180811	20190903	a	-53	Bauder A. (VAW)
CH	FIRNALPELI	424	20160902	20180915	tG	-25	Jäggi M. (OW-Forest)
CH	FORNO	396	20171007	20180905	tG	-29	Keiser M. (GR-Forest)
CH	FORNO	396	20180905	20190903	t	-27	Keiser M. (GR-Forest)
CH	GAMCHI	440	20171019	20181003	tG	-8	Schenk M. (BE-Forest)
CH	GAMCHI	440	20181003	20191018	t	-9	Schenk M. (BE-Forest)
CH	GAULI	449	20170928	20180915	tG	-41	Haider M. (BE-Forest)
CH	GLAERNISCH	418	20171101	20180811	tG	-15	Klauser H. (private)
CH	GLAERNISCH	418	20180811	20190831	t	-22	Klauser H. (private)
CH	GORNER	391	20171013	20181013	tG	-70	Jörger L. (VS-Forest), Walther S. (VS-Forest)
CH	GORNER	391	20181013	20191013	t	-70	Jörger L. (VS-Forest), Walther S. (VS-Forest)
CH	GRAND DESERT	373	20170913	20180913	tG	2	Bourban F. (VS-Forest)
CH	GRAND DESERT	373	20180913	20190912	t	-60	Bourban F. (VS-Forest)
CH	GRAND PLAN NEVE	455	20170908	20181009	tG	-4	Marlétaz J. (VD-Forest)
CH	GRAND PLAN NEVE	455	20181009	20190927	t	-1	Marlétaz J. (VD-Forest)
CH	GRIES	359	20170807	20180815	aP	-27	Bauder A. (VAW)
CH	GRIES	359	20180815	20190825	a	-58	Bauder A. (VAW)
CH	GRIESS (KLAUSEN)	425	20171005	20180925	tG	-5	Annen B. (UR-Forest)
CH	GRIESS (KLAUSEN)	425	20180925	20190920	t	-25	Annen B. (UR-Forest)
CH	GRIESSEN (OBWALDEN)	423	20160913	20180917	tG	-12	Jäggi M. (OW-Forest)
CH	GRIESSEN (OBWALDEN)	423	20180917	20190927	t	-7	Jäggi M. (OW-Forest)
CH	GROSSER ALETSCH	360	20170807	20180927	aP	-63	Bauder A. (VAW)
CH	GROSSER ALETSCH	360	20180927	20190904	a	-80	Bauder A. (VAW)
CH	HINTERSULZFIRN	419	20170928	20180928	tG	-2	Zweifel R. (GL-Forest)
CH	HINTERSULZFIRN	419	20180928	20190924	t	-3	Köpfli P. (GL-Forest)
CH	HOHLAUB	3332	20171005	20180911	aP	-13	Bauder A. (VAW)
CH	HOHLAUB	3332	20180911	20190921	a	-5	Bauder A. (VAW)
CH	KALTWASSER	363	20171005	20180919	tG	-42	Schmidhalter M. (VS-Forest)
CH	KALTWASSER	363	20180919	20191008	t	-17	Schmidhalter M. (VS-Forest)
CH	KEHLEN	431	20170908	20181004	tG	-14	Planzer M. (UR-Forest)
CH	KEHLEN	431	20181004	20191011	t	-13	Planzer M. (UR-Forest)
CH	KESSJEN	393	20171005	20180911	aP	-9	Bauder A. (VAW)
CH	KESSJEN	393	20180911	20190921	a	-6	Bauder A. (VAW)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
CH	LAEMMERN (WILDSTRUBEL)	437	20170908	20181017	tG	-655	Meier-Glaser A. (BE-Forest)
CH	LAEMMERN (WILDSTRUBEL)	437	20181017	20190920	t	-57	Meier-Glaser A. (BE-Forest)
CH	LAVAZ	416	20160817	20180828	tG	-111	Lutz R. (GR-Forest)
CH	LAVAZ	416	20180828	20190827	t	-13	Lutz R. (GR-Forest)
CH	LENTA	414	20170821	20180828	tG	-12	Riedi B. (GR-Forest)
CH	LIMMERN	421	20171007	20181013	tG	-9	Steinegger U. (private)
CH	LIMMERN	421	20181013	20191016	t	-4	Steinegger U. (private)
CH	MOIRY	380	20170925	20180927	tG	-44	Chevalier G. (VS-Forest)
CH	MONT DURAND	369	20170830	20180903	tG	-9	Chabloz J. (private)
CH	MONT MINE	378	20171012	20181005	tG	-27	Fellay F. (VS-Forest)
CH	MONT MINE	378	20181005	20191014	t	-21	Fellay F. (VS-Forest)
CH	MORTERATSCH, VADRET DA	1673	20171006	20181011	tG	-38	Godly G. (GR-Forest)
CH	MORTERATSCH, VADRET DA	1673	20181011	20190910	t	-27	Godly G. (GR-Forest)
CH	MUTT	472	20170901	20180831	aP	-19	Bauder A. (VAW)
CH	OBERER GRINDELWALD	444	20170829	20180815	aP	-19	Bauder A. (VAW)
CH	OBERER GRINDELWALD	444	20180815	20190825	a	-23	Bauder A. (VAW)
CH	PALUE	398	20171012	20180913	tG	-6	Berchier G. (GR-Forest)
CH	PALUE	398	20180913	20190920	t	-8	Berchier G. (GR-Forest)
CH	PANEYROSSE	456	20170907	20180928	tG	-6	Marlétaz J. (VD-Forest)
CH	PANEYROSSE	456	20180928	20190920	t	-8	Marlétaz J. (VD-Forest)
CH	PARADIES	412	20170907	20180920	tG	-40	Fisler C. (GR-Forest)
CH	PARADIES	412	20180920	20190920	t	-9	Fisler C. (GR-Forest)
CH	PARADISINO (CAMPO)	397	20171018	20180914	tG	-10	Berchier G. (GR-Forest)
CH	PARADISINO (CAMPO)	397	20180914	20190913	t	-1	Berchier G. (GR-Forest)
CH	PIZOL	417	20160916	20180921	tG	-48	Brandes T. (SG-Forest)
CH	PIZOL	417	20180921	20190919	t	-14	Brandes T. (SG-Forest)
CH	PLATTALVA	420	20171007	20181014	tG	-15	Steinegger U. (private)
CH	PLATTALVA	420	20181014	20191016	t	-14	Steinegger U. (private)
CH	PORCHABELLA	410	20170921	20180904	tG	-12	Bieler C. (GR-Forest)
CH	PORCHABELLA	410	20180904	20190913	t	-17	Bieler C. (GR-Forest)
CH	PRAPIO	453	20171017	20180911	tG	0	Binggeli J. (private)
CH	PRAPIO	453	20180911	20191001	t	-1	Binggeli J. (private)
CH	PUNTEGLIAS	415	20171012	20181009	tG	14	Buchli C. (GR-Forest)
CH	RAETZLI (PLAINE MORTE)	434	20170829	20180828	aP	-6	Bauder A. (VAW)
CH	RAETZLI (PLAINE MORTE)	434	20180828	20190903	a	-11	Bauder A. (VAW)
CH	RHONE	473	20170921	20180711	aP	-35	Bauder A. (VAW)
CH	RHONE	473	20180711	20190825	a	-36	Bauder A. (VAW)
CH	RIED	387	20171007	20181014	tG	-5	Rovina P. (VS-Forest)
CH	RIED	387	20181014	20191013	t	-8	Rovina P. (VS-Forest)
CH	ROSEG	406	20170913	20181026	tG	29	Godly G. (GR-Forest)
CH	SALEINA	458	20171005	20180904	tG	-2	Médico J. (VS-Forest)
CH	SALEINA	458	20180904	20191016	t	-16	Stoebener P. (VS-Forest)
CH	SANKT ANNA	432	20171004	20180910	tG	-7	Eggimann L. (UR-Forest)
CH	SANKT ANNA	432	20180910	20190920	t	-10	Eggimann L. (UR-Forest)
CH	SARDONA	407	20161004	20181005	tG	-8	Brandes T. (SG-Forest)
CH	SARDONA	407	20181005	20190911	t	-1	Brandes T. (SG-Forest)
CH	SCALETTA	1680	20170731	20180914	tG	-100	Teufen B. (private)
CH	SCALETTA	1680	20180914	20190920	t	-20	Teufen B. (private)
CH	SCHWARZBERG	395	20171005	20180911	aP	-27	Bauder A. (VAW)
CH	SCHWARZBERG	395	20180911	20190921	a	-24	Bauder A. (VAW)
CH	SEEWJINEN	3333	20171005	20180911	aP	-6	Bauder A. (VAW)
CH	SEEWJINEN	3333	20180911	20190921	a	-4	Bauder A. (VAW)
CH	SESVENNA	401	20170831	20180904	tG	-15	Duri K. (GR-Forest)
CH	SESVENNA	401	20180904	20190829	t	-170	Renz G. (GR-Forest)
CH	SEX ROUGE	454	20170908	20180904	tG	-5	Binggeli J. (private)
CH	SEX ROUGE	454	20180904	20190915	t	-5	Binggeli J. (private)
CH	SILVRETTA	408	20170825	20180816	aP	-14	Bauder A. (VAW)
CH	SILVRETTA	408	20180816	20190929	a	-25	Bauder A. (VAW)
CH	STEIN	448	20170908	20180909	tG	-31	Rohrer D. (BE-Forest)
CH	STEIN	448	20180909	20190826	t	-58	Rohrer D. (BE-Forest)
CH	STEINLIMMI	447	20170908	20180902	tG	-20	Rohrer D. (BE-Forest)
CH	STEINLIMMI	447	20180902	20190826	t	-26	Rohrer D. (BE-Forest)
CH	SURETTA	411	20170824	20180911	tG	-4	Fisler C. (GR-Forest)
CH	SURETTA	411	20180911	20190827	t	-11	Fisler C. (GR-Forest)
CH	TIATSCHA	402	20160907	20190929	a	-22	Bauder A. (VAW)
CH	TIEFEN	433	20171005	20180910	tG	-7	Eggimann L. (UR-Forest)
CH	TIEFEN	433	20180910	20190919	t	-14	Eggimann L. (UR-Forest)
CH	TORTIN GLACIER DE (MONT FORT)	372	20170916	20181008	tG	-39	Bourban F. (VS-Forest)
CH	TORTIN GLACIER DE (MONT FORT)	372	20181008	20190913	t	18	Bourban F. (VS-Forest)
CH	TRIENT	457	20171007	20180923	tG	-13	Ehinger J. (private)
CH	TRIENT	457	20180923	20191012	t	-33	Ehinger J. (private)
CH	TRIFT (GADMEN)	446	20170822	20180920	aP	0	Bauder A. (VAW)
CH	TRIFT (GADMEN)	446	20180920	20190825	a	-1	Bauder A. (VAW)
CH	TSANFLEURON	371	20171011	20180912	tG	-24	Fellay F. (VS-Forest)
CH	TSANFLEURON	371	20180912	20190920	t	-17	Fellay F. (VS-Forest)
CH	TSCHIERVA	405	20170913	20180912	tG	-32	Godly G. (GR-Forest)
CH	TSCHIERVA	405	20180912	20190913	t	-47	Godly G. (GR-Forest)
CH	TSCHINGEL	441	20170922	20180918	tG	-2	Schai R. (BE-Forest)
CH	TSCHINGEL	441	20180918	20191014	t	-1	Schai R. (BE-Forest)
CH	TSEUDET	364	20171017	20180919	tG	-2	Médico J. (VS-Forest)
CH	TSEUDET	364	20180919	20190920	t	-312	Stoebener P. (VS-Forest)
CH	TSIDJIORE NOUVE	376	20171010	20180920	tG	-6	Fellay F. (VS-Forest)
CH	TSIDJIORE NOUVE	376	20180920	20190927	t	-6	Fellay F. (VS-Forest)
CH	TURTMANN (WEST)	385	20171002	20181011	tG	-128	Brigger A. (VS-Forest)
CH	UNTERER GRINDELWALD	443	20170921	20180815	aP	-43	Bauder A. (VAW)
CH	UNTERER GRINDELWALD	443	20180815	20190825	a	-36	Bauder A. (VAW)
CH	VALLEGGIA	467	20170924	20180905	tG	-12	Soldati M. (TI-Forest)
CH	VALLEGGIA	467	20180905	20190918	t	-8	Soldati M. (TI-Forest)
CH	VALSOREY	365	20171017	20180919	tG	-20	Médico J. (VS-Forest)
CH	VALSOREY	365	20180919	20190920	t	-26	Stoebener P. (VS-Forest)
CH	VERSTANKLA	409	20170908	20180919	tG	-20	Ebneter P. (GR-Forest)
CH	VERSTANKLA	409	20180919	20190822	t	-8	Ebneter P. (GR-Forest)
CH	VORAB	413	20171015	20180815	tG	-22	Deflorin R. (GR-Forest)
CH	VORAB	413	20180815	20190915	t	-18	Deflorin R. (GR-Forest)
CH	WALLENBUR	428	20170929	20181003	tG	-24	Kläger P. (UR-Forest)
CH	WALLENBUR	428	20170929	20191001	t	0	Kläger P. (UR-Forest)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
CH	ZINAL	382	20170928	20180927	tG	-26	Chevalier G. (VS-Forest)
CN - China							
CN	URUMQI GLACIER NO. 1	853	20170826	20180828	tG	-8	Wang P. (CAREERI), Xu C. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1	853	20180828	20190830	tG	-9	Wang P. (CAREERI), Xu C. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170826	20180828	tG	-8	Wang P. (CAREERI), Xu C. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190830	tG	-9	Wang P. (CAREERI), Xu C. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170826	20180828	tG	-6	Wang P. (CAREERI), Xu C. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190830	tG	-5	Wang P. (CAREERI), Xu C. (CAREERI), Li Z. (CAREERI)
CO - Colombia							
CO	CONEJERAS	2721	20180131	20191203	tG	-22	Ceballos Lievano J. (IDEAM), Ospina A. (IDEAM)
CO	CONEJERAS	2721	20180131	20191203	tG	-22	Ceballos Lievano J. (IDEAM), Ospina A. (IDEAM)
CO	RITACUBA BLANCO	2763	20179999	20189999		0	Ceballos Lievano J. (IDEAM), Rojas F. (IDEAM)
CO	RITACUBA BLANCO	2763	20190223	20191202	tG	0	Ceballos Lievano J. (IDEAM), Rojas F. (IDEAM)
ES - Spain							
ES	MALADETA	942	20160928	20181004	C	-26	Cobos G. (UPV)
ES	MALADETA	942	20181004	20191025	C	-65	Cobos G. (UPV)
FR - France							
FR	ARGENTIERE	354	20170907	20180905	aG	-19	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	ARGENTIERE	354	20180905	20190913	aG	-25	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	BLANC	351	20170913	20180916	aG	-137	Bouvier M. (IRSTEA), Thibert E. (IRSTEA), Bonnefoy M. (IRSTEA)
FR	BLANC	351	20180916	20190927	aG	-59	Bouvier M. (INRAE), Thibert E. (INRAE), Bonnefoy M. (INRAE)
FR	BOSSONS	355	20170915	20181107	aG	ST	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	BOSSONS	355	20170915	20191001	tG	17	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	MER DE GLACE	353	20170905	20180906	aG	-28	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	MER DE GLACE	353	20180906	20190912	aG	-55	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	OSSOUE	2867	20171008	20181003	aG	-1	René P. (AM)
FR	OSSOUE	2867	20181003	20191005	aG	-15	René P. (AM)
FR	SAINT SORLIN	356	20170825	20180822	aG	-15	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	SAINT SORLIN	356	20180822	20190823	aG	-31	Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
GE - Georgia							
GE	CHALAATI	1110	20009999	20189999	sC	-295	Tielidze L. (TSU/IG)
GL - Greenland							
GL	MITTIVAKKAT	1629	20179999	20189999		-10	Knudsen N. (DESA), Mernild S. (NERSC), de Villiers S. (HVL)
HM - Heard & McDonald Islands							
HM	UN-NAMED 9	2910	20180905	20190820	tG	-6	
IN - India							
IN	BARA SHIGRI	2920	20160999	20180999		-28	Sharma P. (NCPOR)
IN	BARA SHIGRI	2920	20189999	20199999		-14	Sharma P. (NCPOR)
IN	BATAL	7182	20160999	20180999		-26	Sharma P. (NCPOR)
IN	BATAL	7182	20189999	20199999		-13	Sharma P. (NCPOR)
IN	GEPANG GATH	10475	20160999	20180999		-46	Sharma P. (NCPOR)
IN	GEPANG GATH	10475	20189999	20199999		-23	Sharma P. (NCPOR)
IN	PENSILUNGPA (GLACIER NO. 10)	3655	20160999	20180999		-15	Mehta M. (WIHG)
IN	SAMUDRA TAPU	3635	20160999	20180999		-66	Sharma P. (NCPOR)
IN	SAMUDRA TAPU	3635	20189999	20199999		-33	Sharma P. (NCPOR)
IN	SUTRI DHAKA	10476	20160999	20180999		-42	Sharma P. (NCPOR)
IN	SUTRI DHAKA	10476	20189999	20199999		-21	Sharma P. (NCPOR)
IS - Iceland							
IS	BLAGNIPUJOKULL	3130	20180105	20181001	tG	-98	Gíslason P. (IGS-IMO)
IS	BLAGNIPUJOKULL	3130	20181001	20191012	tG	-10	Gíslason P. (IGS-IMO)
IS	BREIDAMJOKULL E. B.	3062	20170901	20181009	tG	-90	Guðmundsson S. (IGS-IMO)
IS	BREIDAMJOKULL E. B.	3062	20181009	20191114	tG	-45	Guðmundsson S. (IGS-IMO)
IS	BREIDAMJOKULL W. A.	3063	20170901	20181009	tG	-35	Guðmundsson S. (IGS-IMO)
IS	BREIDAMJOKULL W. A.	3063	20181009	20191114	tG	-25	Guðmundsson S. (IGS-IMO)
IS	BURFELLSJOKULL	8287	20170917	20181002	tG	-39	Brynjólfsson S. (IGS-IMO)
IS	BURFELLSJOKULL	8287	20181002	20190925	tG	-6	Brynjólfsson S. (IGS-IMO)
IS	DEILDARDALSJOKULL	23652	20180918	20191009	tG	-5	Brynjólfsson S. (IGS-IMO)
IS	FALLJOKULL	3071	20180330	20191021	tG	15	Þorláksdóttir S. (IGS-IMO)
IS	FJALLSJOKULL BY BREIDAMERKURFJALL	3073	20170901	20181009	tG	-10	Guðmundsson S. (IGS-IMO)
IS	FJALLSJOKULL BY BREIDAMERKURFJALL	3073	20181009	20191114	tG	-36	Guðmundsson S. (IGS-IMO)
IS	FJALLSJOKULL BY GAMLASEL	3074	20170901	20181009	tG	0	Guðmundsson S. (IGS-IMO)
IS	FJALLSJOKULL BY GAMLASEL	3074	20181009	20191114	tG	-18	Guðmundsson S. (IGS-IMO)
IS	FLAAJOKULL	3078	20171015	20181020	tG	-9	Pálsson B. (IGS-IMO)
IS	FLAAJOKULL	3078	20181020	20191114	tG	-78	Pálsson B. (IGS-IMO)
IS	FLAAJOKULL E 148	3076	20171015	20181020	tG	-24	Pálsson B. (IGS-IMO)
IS	FLAAJOKULL E 148	3076	20181020	20191114	tG	-59	Pálsson B. (IGS-IMO)
IS	GEITLANDSJOKULL	3128	20170902	20180907	tG	-40	Kristinsson B. (IGS-IMO)
IS	GEITLANDSJOKULL	3128	20180907	20190809	tG	-78	Kristinsson B. (IGS-IMO)
IS	GLJUFURARJOKULL	3080	20170909	20181108	tG	-12	Hjartarson Á. (IGS-IMO)
IS	GLJUFURARJOKULL	3080	20181108	20190907	tG	-2	Hjartarson Á. (IGS-IMO)
IS	HAGAFELLSJOKULL E	3081	20171014	20180922	tG	-706	Sigurðsson E. (IGS-IMO)
IS	HAGAFELLSJOKULL E	3081	20180922	20190912	tG	-151	Sigurðsson E. (IGS-IMO)
IS	HAGAFELLSJOKULL W	3082	20170930	20180922	tG	-52	Sigurðsson E. (IGS-IMO)
IS	HAGAFELLSJOKULL W	3082	20180922	20190912	tG	-88	Sigurðsson E. (IGS-IMO)
IS	HEINABERGSJOKULL H	3084	20171108	20181108	tG	-21	Guðmundsson E. (IGS-IMO)
IS	HEINABERGSJOKULL H	3084	20181108	20191107	tG	-21	Guðmundsson E. (IGS-IMO)
IS	HRUTARJOKULL	3091	20170901	20181009	tG	-29	Guðmundsson S. (IGS-IMO)
IS	HRUTARJOKULL	3091	20181015	20191114	tG	-48	Guðmundsson S. (IGS-IMO)
IS	HYRNINGSJOKULL	3092	20170906	20180905	tG	0	Haraldsson H. (IGS-IMO)
IS	HYRNINGSJOKULL	3092	20180905	20190929	tG	-2	Haraldsson H. (IGS-IMO)
IS	JOKULHALS	3093	20180906	20190929	tG	SN	Haraldsson H. (IGS-IMO)
IS	KALDALONSJOKULL	3095	20170923	20180921	tG	-182	Matthíasson V. (IGS-IMO)
IS	KALDALONSJOKULL	3095	20180921	20190927	tG	0	Matthíasson V. (IGS-IMO)
IS	KIRKJUJOKULL	3129	20141103	20180902	tG	-155	Gröndal B. (IGS-IMO)
IS	KIRKJUJOKULL	3129	20180902	20191002	tG	-60	Gröndal B. (IGS-IMO)
IS	KVIARJOKULL	3098	20170901	20181009	tG	73	Guðmundsson S. (IGS-IMO)
IS	KVIARJOKULL	3098	20181009	20190526	tG	19	Guðmundsson S. (IGS-IMO)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
IS	LAMBATUNGNAJOKULL	10418	20171020	20181022	tG	-34	Pálsson B. (IGS-IMO)
IS	LAMBATUNGNAJOKULL	10418	20181022	20191116	tG	-47	Pálsson B. (IGS-IMO)
IS	LEIRUFJARDARJOKULL	3102	20161007	20191002		-100	Sólbergsson Á. (IGS-IMO)
IS	MORSARJOKULL	3104	20170916	20181102	tG	-94	Kristjánsson R. (IGS-IMO)
IS	MORSARJOKULL	3104	20181102	20191006	tG	21	Kristjánsson R. (IGS-IMO)
IS	MULAJOKULL S	3105	20171014	20180923	tG	-24	Jónsson L. (IGS-IMO)
IS	MULAJOKULL W	3106	20171014	20180923	tG	25	Jónsson L. (IGS-IMO)
IS	NAUTHAGAJOKULL	3107	20171014	20180923	tG	-49	Jónsson L. (IGS-IMO)
IS	REYKJAFJARDARJOKULL	3109	20171005	20180917	tG	-36	Jóhannesson Þ. (IGS-IMO)
IS	REYKJAFJARDARJOKULL	3109	20180917	20190917	tG	-42	Jóhannesson Þ. (IGS-IMO)
IS	RJUPNABREKKUJOKULL	3136	20180101	20190901	tG	-64	Sigurðsson S. (IGS-IMO)
IS	SATUJOKULL E	3099	20171007	20190929	tG	-69	Kárason V. (IGS-IMO)
IS	SATUJOKULL W	3110	20171007	20190929	tG	-77	Kárason V. (IGS-IMO)
IS	SIDUJOKULL E M 177	3112	20190505	20191127	tG	-150	Pálsson H. (IGS-IMO)
IS	SKAFTAFELLSJOKULL	3113	20180329	20191019	tG	-140	Þorláksdóttir S. (IGS-IMO)
IS	SKEIDARARJOKULL E1	3116	20171017	20181101	tG	-237	Kristjánsson R. (IGS-IMO)
IS	SKEIDARARJOKULL E1	3116	20181101	20191005	tG	21	Kristjánsson R. (IGS-IMO)
IS	SKEIDARARJOKULL E2	3117	20171017	20181101	tG	-132	Kristjánsson R. (IGS-IMO)
IS	SKEIDARARJOKULL E2	3117	20181101	20191005	tG	-132	Kristjánsson R. (IGS-IMO)
IS	SKEIDARARJOKULL E3	3118	20171016	20181101	tG	-243	Kristjánsson R. (IGS-IMO)
IS	SKEIDARARJOKULL E3	3118	20181101	20191005	tG	-243	Kristjánsson R. (IGS-IMO)
IS	SOLHEIMAJOKULL W	3122	20171022	20181104	tG	-134	Gunnlaugsson E. (IGS-IMO)
IS	SOLHEIMAJOKULL W	3122	20181104	20191206	tG	-25	Gunnlaugsson E. (IGS-IMO)
IS	SVINAFELLSJOKULL	3124	20180402	20191019	tG	-60	Þorláksdóttir S. (IGS-IMO)
IS	TINDFJALLAJOKULL	10493	20170830	20180825	tG	-23	Þorbergsson A. (IGS-IMO)
IS	TINDFJALLAJOKULL	10493	20180825	20190901	tG	-31	Þorbergsson A. (IGS-IMO)
IS	TORFAJOKULL N	23777	20170901	20190928	tG	-40	Hálfdánsson Á. (IGS-IMO)
IS	TORFAJOKULL S	23779	20170901	20191002	tG	-46	Hálfdánsson Á. (IGS-IMO)
IS	TUNGNAARJOKULL	3126	20171104	20181103	tG	-44	Hilmarsson S. (IGS-IMO)
IS	TUNGNAARJOKULL	3126	20181103	20191124	tG	-151	Hilmarsson S. (IGS)
IS	TUNGNAHRYGGSJOKULL	23620	20180915	20190921	tG	-3	Jónsson S. (IGS-IMO)
IT - Italy							
IT	AGNELLO MER.	684	20160908	20180909	tG	-1	Tron M. (CGI)
IT	ALTA (VEDRETTA) / HOHENF.	632	20170824	20180821	tG	-13	Perini G. (CGI), Benetton S. (CGI), Benetton G. (CGI), Perini G. (SGAA), Benetton S. (SGAA), Benetton G. (SGAA)
IT	ALTA (VEDRETTA) / HOHENF.	632	20180821	20190821	tG	-4	Perini G. (CGI), Benetton S. (CGI), Benetton G. (CGI), Perini G. (SGAA), Benetton S. (SGAA), Benetton G. (SGAA)
IT	AMOLA	638	20170901	20181010	tG	-30	Piffer A. (SAT)
IT	AMOLA	638	20181010	20191005	tG	-7	Travaglia E. (SAT)
IT	ANTELAO INFERIORE (OCC.)	642	20170817	20180823	tG	-6	Perini G. (CGI)
IT	ANTELAO SUP.	643	20170817	20180823	tG	-8	Perini G. (CGI), Perini G. (SGAA)
IT	ANTELAO SUP.	643	20180823	20190819	tG	0	Perini G. (CGI), Perini G. (SGAA)
IT	AOUILLE	1239	20170907	20180915	tG	0	Nicolino M. (CGI), Chevrère R. (CGI)
IT	AOUILLE	1239	20180915	20190921	tG	-3	Nicolino M. (CGI), Chevrère R. (CGI)
IT	ARGUEREY MER.	1253	20170822	20180827	tG	0	Nigrelli G. (CGI), Chiarle M. (CGI)
IT	ARGUEREY MER.	1253	20180827	20190912	tG	-5	Nigrelli G. (CGI), Chiarle M. (CGI)
IT	ARGUEREY SETT.	1254	20170822	20180827	tG	-5	Nigrelli G. (CGI), Chiarle M. (CGI)
IT	ARGUEREY SETT.	1254	20180827	20190912	tG	-16	Nigrelli G. (CGI), Chiarle M. (CGI)
IT	AROLLA	2370	20170922	20180928	tG	-1	Borre P. (CGI), Caminada C. (CGI)
IT	AROLLA	2370	20180928	20190923	tG	-1	Borre P. (CGI), Caminada C. (CGI)
IT	BASEI	611	20170830	20180904	tG	-2	Fornengo F. (CGI), Cat Berro D. (CGI)
IT	BASEI	611	20180904	20191005	tG	-2	Cat Berro D. (CGI), Miravalle R. (CGI)
IT	BASSA DELL' ORTLES / ORTLERF. NIEDERER	1128	20170820	20180905	tG	-23	Barison G. (SGAA), Seppi R. (SGAA), Sampieri R. (SGAA)
IT	BELVEDERE (MACUGNAGA)	618	20171016	20181013	tG	-11	Tamburini A. (CGI), Versaci S. (CGI), Mortara G. (CGI)
IT	BELVEDERE (MACUGNAGA)	618	20181013	20191101	tG	-19	Tamburini A. (CGI), Versaci S. (CGI), Mortara G. (CGI)
IT	BERTA	1295	20170829	20180905	tG	-2	Rogliardo F. (CGI)
IT	BERTA	1295	20180905	20190904	tG	0	Rogliardo F. (CGI)
IT	BESSANESE	1297	20170907	20180930	tG	-1	Rogliardo F. (CGI)
IT	BESSANESE	1297	20180930	20190915	tG	-73	Rogliardo F. (CGI)
IT	BORS	2453	20170821	20190816	tG	-18	Piccini P. (CGI)
IT	BREUIL SETT.	1256	20170829	20180926	tG	-11	Nigrelli G. (CGI)
IT	BREUIL SETT.	1256	20180926	20190920	tG	-12	Nigrelli G. (CGI), Chiarle M. (CGI)
IT	BROGLIO	2375	20170821	20180923	tG	-6	Miravalle R. (CGI)
IT	BROGLIO	2375	20180923	20190916	tG	-8	Miravalle R. (CGI)
IT	CALDERONE	1107	20180915	20190914	aP	0	Pecci M. (CGI), d'Aquila P. (CAI), Cappelletti D. (CGI), Caira T. (CAI), Esposito G. (CNR), Pecci M. (CAI)
IT	CAPRA	1304	20170829	20180822	tG	-110	Bertoglio V. (CGI), Ferrero C. (CGI)
IT	CAPRA	1304	20180822	20190829	tG	-11	Bertoglio V. (CGI), Costanzo L. (CGI)
IT	CARRO OCCIDENT.	2358	20170907	20180923	tG	-1	Bertoglio V. (CGI), Miravalle R. (CGI), Saccoletto V. (CGI)
IT	CARRO OCCIDENT.	2358	20180923	20190919	tG	-1	Bertoglio V. (CGI), Miravalle R. (CGI), Naudin A. (CGI)
IT	CASPOGGIO	628	20170923	20180824	tG	-17	De Zaiacomo M. (SGL)
IT	CASPOGGIO	628	20180824	20190905	tG	-7	Porta R. (SGL), Ruffoni M. (SGL)
IT	CASSANDRA OR.	1185	20171101	20181014	tG	-3	De Zaiacomo M. (SGL)
IT	CASSANDRA OR.	1185	20181014	20191018	tG	-3	De Zaiacomo M. (SGL)
IT	CEDEC	1165	20170913	20180913	tG	-17	Colombarolli D. (SGL), Fioletti M. (SGL), Bonetti L. (SGL)
IT	CEDEC	1165	20180913	20190915	tG	-6	Colombarolli D. (SGL)
IT	CEVEDALE FORCOLA / FUERKELEF.	663	20170824	20180821	tG	-17	Perini G. (CGI), Perini G. (SGAA), Benetton S. (CGI), Benetton S. (SGAA), Benetton G. (CGI), Benetton G. (SGAA)
IT	CEVEDALE FORCOLA / FUERKELEF.	663	20180821	20190821	tG	-5	Perini G. (CGI), Perini G. (SGAA), Benetton S. (CGI), Benetton S. (SGAA), Benetton G. (CGI), Benetton G. (SGAA)
IT	CEVEDALE PRINCIPALE / ZUFALLF.	662	20170824	20180821	tG	-1	Perini G. (CGI), Perini G. (SGAA), Benetton S. (CGI), Benetton S. (SGAA), Benetton G. (CGI), Benetton G. (SGAA)
IT	CEVEDALE PRINCIPALE / ZUFALLF.	662	20180821	20190821	tG	-10	Perini G. (CGI), Perini G. (SGAA), Benetton S. (CGI), Benetton S. (SGAA), Benetton G. (CGI), Benetton G. (SGAA)
IT	CHATEAU BLANC	1251	20170822	20180828	tG	-4	Perona S. (CGI)
IT	CHATEAU BLANC	1251	20180828	20190903	tG	-14	Perona S. (CGI)
IT	CIAMARELLA	1298	20170905	20180828	tG	0	Rogliardo F. (CGI)
IT	CIAMARELLA	1298	20180828	20190913	tG	-7	Rogliardo F. (CGI)
IT	CIARDONEY	1264	20170906	20180910	tG	-16	Mercalli L. (SMI), Cat Berro D. (SMI)
IT	CIARDONEY	1264	20180910	20190913	tG	-9	Mercalli L. (SMI), Cat Berro D. (SMI), Fornengo F. (SMI)
IT	COUPE DE MONEY	1271	20170906	20180914	tG	-11	Bertoglio V. (CGI), Borre P. (CGI), Caminada C. (CGI)
IT	COUPE DE MONEY	1271	20180914	20190915	tG	-4	Bertoglio V. (CGI), Borre P. (CGI), Caminada C. (CGI)
IT	CRODA ROSSA / ROTWANDF.	654	20170904	20180822	tG	-2	Benetton S. (CGI), Benetton G. (CGI)
IT	CRODA ROSSA / ROTWANDF.	654	20180822	20190823	tG	0	Benetton S. (CGI), Benetton G. (CGI), Toro M. (CGI)
IT	DISGRAZIA	2503	20160910	20180908	tG	-33	Neri G. (SGL), Bolis A. (SGL)
IT	DISGRAZIA	2503	20180908	20190914	tG	-35	Neri G. (SGL), Bolis A. (SGL)
IT	DOSDE OR.	625	20170930	20180908	tG	-12	Toffaletti A. (SGL), Bertoni G. (SGL)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
IT	DOSDE OR.	625	20180908	20190901	tG	-9	Toffaletti A. (SGL), Lojacono G. (SGL)
IT	DOSEGU	668	20170924	20180909	tG	-27	Borghi A. (SGL)
IT	DOSEGU	668	20180909	20190915	tG	-8	Borghi A. (SGL)
IT	DZASSET	2372	20170907	20180915	tG	-4	Bertoglio V. (CGI), Borre P. (CGI)
IT	DZASSET	2372	20180915	20190914	tG	-13	Bertoglio V. (CGI), Borre P. (CGI), Caminada C. (CGI)
IT	ENTRELOR SETT.	2377	20170827	20180921	tG	-16	Peracino A. (CGI), Peretti F. (CGI)
IT	ENTRELOR SETT.	2377	20180921	20190913	tG	-3	Rossotto A. (CGI), Peretti F. (CGI)
IT	FOND OCCID.	2380	20170822	20180908	tG	-5	Pollicini F. (CGI), Borney S. (CGI)
IT	FOND OCCID.	2380	20180908	20190914	tG	-9	Pollicini F. (CGI), Borney S. (CGI)
IT	FOND OR.	1243	20170822	20180908	tG	-9	Pollicini F. (CGI), Borney S. (CGI)
IT	FOND OR.	1243	20180908	20190914	tG	-8	Pollicini F. (CGI), Borney S. (CGI)
IT	FONTANA BIANCA / WEISSBRUNNF.	1507	20171013	20180912	tG	-14	Barison G. (SGAA), Sartori G. (SGAA), Sampieri R. (SGAA)
IT	FONTANA BIANCA / WEISSBRUNNF.	1507	20180912	20190831	tG	-18	Sampieri R. (SGAA), Rosan R. (SGAA)
IT	FORNI CENTRALE	670	20170927	20180919	tG	-9	Cola G. (SGL)
IT	FORNI CENTRALE	670	20180919	20190915	tG	-13	Lendvai A. (SGL), Pagliardi P. (SGL)
IT	FORNI OCCIDENTALE	10420	20170927	20180919	tG	-15	Cola G. (SGL)
IT	FORNI ORIENTALE	10421	20170927	20180919	tG	-114	Cola G. (SGL)
IT	FRANE (VEDR. DELLE) / STEINSCHLAGF.	2624	20160908	20180816	tG	-17	Greco G. (SGAA), Le Pera L. (SGAA)
IT	FRANE (VEDR. DELLE) / STEINSCHLAGF.	2624	20180816	20190920	tG	-3	Greco G. (SGAA)
IT	GLIAIRETTA VAUDET	1248	20180828	20180826	tG	-13	Pollicini F. (CGI)
IT	GLIAIRETTA VAUDET	1248	20170907	20180828	tG	-12	Pollicini F. (CGI)
IT	GOLETTA	683	20170917	20180902	tG	-7	Pollicini F. (CGI)
IT	GOLETTA	683	20180902	20190915	tG	-18	Pollicini F. (CGI), Borney S. (CGI)
IT	GRAMES ORIENT. + CENTR. / GRAMSENF. OESTL. + ZENTR.	2599	20170826	20180905	tG	-76	Benetton S. (SGAA), Benetton G. (SGAA)
IT	GRAN NEYRON	1283	20170917	20180908	tG	-9	Vallet V. (CGI)
IT	GRAN NEYRON	1283	20180908	20190818	tG	-14	Vallet V. (CGI)
IT	GRAN PARADISO	1235	20170919	20180908	tG	-12	Bertoglio V. (CGI), Massoni D. (CGI), Vallet R. (CGI)
IT	GRAN PARADISO	1235	20180908	20190919	tG	-335	Bertoglio V. (CGI), Massoni D. (CGI), Vallet R. (CGI)
IT	GRAN PILASTRO (GHIAC. DEL) / GLIEDERF.	652	20170823	20180920	tG	-52	Bertinotti I. (SGAA)
IT	GRAN PILASTRO (GHIAC. DEL) / GLIEDERF.	652	20180920	20190918	tG	-2	Bertinotti I. (SGAA)
IT	GRAN ZEBRU (CENTRALE)	1164	20170913	20180913	tG	-12	Colombarolli D. (SGL), Fioletti M. (SGL), Bonetti L. (SGL)
IT	GRAN ZEBRU (CENTRALE)	1164	20180913	20190915	tG	-9	Galluccio A. (SGL), Peri I. (SGL)
IT	GRAND CROUX CENTR.	1273	20171011	20190915	tG	-2	Bertoglio V. (CGI), Borre P. (CGI)
IT	GRAND ETRET	1238	20160904	20180907	tG	-130	Bertoglio V. (CGI), Borre P. (CGI), Cerise S. (CGI), Massoni D. (CGI)
IT	GRAND ETRET	1238	20180907	20190918	tG	-5	Bertoglio V. (CGI)
IT	GRUETTA ORIENT.	2418	20170815	20180923	tG	-9	Gadin G. (CGI)
IT	GRUETTA ORIENT.	2418	20180923	20190915	tG	-3	Gadin G. (CGI)
IT	HOHSAND SETT. (SABBIONE SETT.)	631	20160903	20180828	tG	-67	Ossola R. (CGI)
IT	HOHSAND SETT. (SABBIONE SETT.)	631	20180828	20190830	tG	-X	Ossola R. (CGI)
IT	INDREN OCC.	1209	20170928	20180902	tG	-6	Piccini P. (CGI), Princisvalle T. (CGI)
IT	INDREN OCC.	1209	20180902	20190915	tG	-4	Piccini P. (CGI)
IT	LA MARE (VEDRETTA DE)	636	20170824	20180909	tG	-10	Carturan L. (CGI), Ferrari C. (CGI), Voltolini C. (CGI)
IT	LA MARE (VEDRETTA DE)	636	20180909	20190921	tG	-72	Carturan L. (CGI), Voltolini C. (CGI)
IT	LAGAUN (VEDRETTA DI) / LAGAUN FERNER	6823	20170829	20180818	tG	-4	Sampieri R. (SGAA), Barison G. (SGAA)
IT	LAGAUN (VEDRETTA DI) / LAGAUN FERNER	6823	20180818	20190922	tG	-5	Sartori G. (SGAA), Barison G. (SGAA)
IT	LANA (VEDR. DI) / AEUSSERES LAHNER KEES	650	20170814	20180820	tG	0	Mattiato M. (SGAA), Covi S. (SGAA)
IT	LAUSON	1275	20170825	20180917	tG	-33	Grosa M. (CGI)
IT	LAUSON	1275	20180917	20190917	tG	-5	Grosa M. (CGI)
IT	LAVACCIU	1285	20170922	20180913	tG	-34	Nicolussi S. (CGI)
IT	LAVACCIU	1285	20180913	20190925	tG	-20	Bracotto G. (CGI)
IT	LAVASSEY	1242	20170822	20180911	tG	-18	Pollicini F. (CGI), Béthaz S. (CGI)
IT	LAVASSEY	1242	20180911	20190914	tG	-72	Pollicini F. (CGI), Borney S. (CGI)
IT	LOBBIA	1150	20170911	20180923	tG	-9	Ferrari C. (SAT), Alberti S. (SAT)
IT	LOBBIA	1150	20180923	20191003	tG	-6	Ferrari C. (SAT), Degasperi G. (SAT)
IT	LUNGA (VEDRETTA) / LANGENF.	661	20170823	20180820	tG	-36	Perini G. (CGI), Perini G. (SGAA), Benetton S. (CGI), Benetton S. (SGAA), Benetton G. (CGI), Benetton G. (SGAA)
IT	LUNGA (VEDRETTA) / LANGENF.	661	20180820	20190820	tG	-24	Perini G. (CGI), Perini G. (SGAA), Benetton S. (CGI), Benetton S. (SGAA), Benetton G. (CGI), Benetton G. (SGAA)
IT	LUPO	1138	20171008	20181024	tG	-3	Scotti R. (SGL), Manni M. (SGL), Porta R. (SGL)
IT	LUPO	1138	20181024	20191014	tG	-3	Scotti R. (SGL), Porta R. (SGL), Oreggioni M. (SGL)
IT	LYS	620	20171018	20181004	tG	-X	Freppaz M. (CGI)
IT	MADACCIO (VEDR. DEL) / MADATSCHF.	1129	20170824	20180820	tG	-14	Sartori G. (SGAA), Sampieri R. (SGAA)
IT	MADACCIO (VEDR. DEL) / MADATSCHF.	1129	20180820	20190905	tG	-9	Sartori G. (SGAA), Seppi R. (SGAA)
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	tG	-44	Franchi G. (CGI)
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	tG	-7	Franchi G. (CGI)
IT	MANDRONE	664	20170911	20190923	tG	-22	Ferrari C. (SAT), Alberti S. (SAT)
IT	MANDRONE	664	20180923	20191004	tG	-7	Ferrari C. (SAT)
IT	MARMOLADA CENTR.	676	20171015	20180930	tG	0	Taufer G. (SAT), Maestri C. (SAT)
IT	MARMOLADA CENTR.	676	20160827	20190903	tG	-53	Varotto M. (CGI), Donadelli G. (CGI), Lucchetta S. (CGI)
IT	MAROVIN	2547	20171007	20180927	tG	0	Butti M. (SGL), Scotti R. (SGL)
IT	MAROVIN	2547	20180927	20191014	tG	0	Scotti R. (SGL), Porta R. (SGL), Oreggioni M. (SGL)
IT	MAZIA (VEDR. DI) / MATSCHERF.	2620	20160829	20180816	tG	-34	Greco G. (SGAA), Teti B. (SGAA), Le Pera L. (SGAA)
IT	MAZIA (VEDR. DI) / MATSCHERF.	2620	20180816	20190916	tG	-24	Greco G. (SGAA), Carbone V. (SGAA), Le Pera L. (SGAA)
IT	MONCIAIR	1237	20170918	20180908	tG	-6	Bertoglio V. (CGI), Borre P. (CGI), Massoni D. (CGI), Vallet R. (CGI)
IT	MONCIAIR	1237	20180908	20190918	tG	-21	Bertoglio V. (CGI)
IT	MONCORVE	1236	20170918	20180908	tG	-33	Bertoglio V. (CGI), Borre P. (CGI), Massoni D. (CGI), Montis V. (CGI)
IT	MONCORVE	1236	20180908	20190918	tG	-224	Bertoglio V. (CGI), Massoni D. (CGI), Vallet R. (CGI)
IT	MONEY	1272	20170908	20180914	tG	-4	Bertoglio V. (CGI), Borre P. (CGI), Caminada C. (CGI)
IT	MONEY	1272	20180914	20190915	tG	-2	Bertoglio V. (CGI), Borre P. (CGI), Caminada C. (CGI)
IT	MONTANDEYNE	1284	20170921	20180912	tG	-7	Nicolussi S. (CGI)
IT	MONTANDEYNE	1284	20180912	20190925	tG	-58	Bracotto G. (CGI)
IT	MONTARSO (VEDR. DI) / FEUERSTEINF.	2631	20160906	20180908	tG	-20	Bertinotti I. (SGAA)
IT	NARDIS OCC.	639	20160827	20180929	tG	-41	Piffer A. (SAT), Ferrari C. (SAT)
IT	NEL CENTRALE	1303	20170824	20180924	tG	-57	Miravalle R. (CGI), Saccoletto V. (CGI)
IT	NEL CENTRALE	1303	20180924	20190918	tG	-6	Miravalle R. (CGI), Naudin A. (CGI)
IT	NOASCHETTA OCCID.	2359	20170822	20180925	tG	-80	Permunian R. (CGI), Naudin A. (CGI)
IT	NOASCHETTA OCCID.	2359	20180925	20190930	tG	-18	Permunian R. (CGI), Naudin A. (CGI)
IT	PALON DELLA MARE LOBO CENTR.	2533	20170913	20180923	tG	-23	Farinella L. (SGL), Izzo M. (SGL)
IT	PALON DELLA MARE LOBO CENTR.	2533	20180923	20190915	tG	-13	Farinella L. (SGL), Izzo M. (SGL)
IT	PALON DELLA MARE LOBO OR.	2534	20170913	20180923	tG	-10	Farinella L. (SGL), Izzo M. (SGL)
IT	PALON DELLA MARE LOBO OR.	2534	20180923	20190915	tG	-5	Farinella L. (SGL), Izzo M. (SGL)
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	tG	-7	Franchi G. (CGI)
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	tG	-16	Franchi G. (CGI)
IT	PERA CIAVAL	1296	20170830	20180907	tG	0	Rogliardo F. (CGI)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
IT	PERA CIAVAL	1296	20180907	20190905	tG	0	Rogliardo F. (CGI)
IT	PERCIA	1240	20170912	20180916	tG	-11	Nicolino M. (CGI), Chevrère R. (CGI)
IT	PERCIA	1240	20180916	20190927	tG	-27	Nicolino M. (CGI)
IT	PIODE	619	20171007	20180922	tG	-28	Piccini P. (CGI), Princisvalle T. (CGI), Viani C. (CGI)
IT	PIZZO FERRE	1181	20170930	20180929	tG	-5	Pironi L. (SGL)
IT	PIZZO FERRE	1181	20180929	20190928	tG	-10	Pironi L. (SGL)
IT	PIZZO SCALINO	1187	20160919	20190929	tG	-39	Monti A. (CGI), Leoni S. (CGI)
IT	PREDAROSSA	1182	20171008	20180829	tG	-20	Urso M. (SGL)
IT	PREDAROSSA	1182	20180829	20190921	tG	-5	Urso M. (SGL)
IT	QUAIRA BIANCA (VEDR. DELLA) / WEISSKARF.	686	20170823	20180921	tG	-42	Bertinotti I. (SGAA)
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20160911	20180912		-117	Benetton S. (SGAA)
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180912	20190824		-14	Benetton S. (SGAA), Benetton G. (SGAA)
IT	ROCCIA VIVA	2364	20171009	20180910	tG	-29	Naudin A. (CGI), Permunian R. (CGI)
IT	ROCCIA VIVA	2364	20180910	20191004	tG	-6	Naudin A. (CGI), Permunian R. (CGI)
IT	ROSIM (VEDR. DI) / ROSIMF.	610	20170823	20180822	tG	-2	Barison G. (SGAA), Rosan R. (SGAA), Montesani G. (SGAA)
IT	ROSIM (VEDR. DI) / ROSIMF.	610	20180822	20190822	tG	-10	Barison G. (SGAA), Sampieri R. (SGAA)
IT	ROSSO DESTRO	648	20170817	20180821	tG	3	Mattiato M. (CGI), Covi S. (CGI)
IT	ROSSO DESTRO	648	20180821	20190811	tG	-3	Mattiato M. (SGAA), Fistill E. (SGAA)
IT	RUTOR	612	20170729	20180825	tG	-2	Garino R. (CGI)
IT	RUTOR	612	20180825	20191017	tG	-3	Garino R. (CGI)
IT	SALDURA MER. (VEDR. DI) / SALDUR F. SUEDL.	1131	20170813	20180929	tG	-20	Greco G. (SGAA), Le Pera L. (SGAA)
IT	SCERSCEN INFERIORE	1186	20170929	20190914	tG	-86	Salvetti A. (SGL), Garlaschelli A. (SGL)
IT	SEA	1299	20170824	20180822	tG	-16	Rogliardo F. (CGI)
IT	SENGIE SETT.	1267	20170921	20180921	tG	0	Borre P. (CGI), Caminada C. (CGI)
IT	SERANA (VEDR.) / SCHRANF.	634	20170826	20180925	tG	-10	Bruschi P. (SGAA)
IT	SERANA (VEDR.) / SCHRANF.	634	20180925	20190831	tG	-8	Bruschi P. (SGAA)
IT	SESIA	1210	20171007	20180922	tG	-6	Piccini P. (CGI), Princisvalle T. (CGI), Viani C. (CGI)
IT	SFORZELLINA	667	20170830	20180924	tG	-41	Smiraglia C. (CGI), Azzoni R. (CGI)
IT	SFORZELLINA	667	20180924	20190917	tG	-41	Smiraglia C. (CGI), Bonetti L. (CGI), Berbenni F. (CGI)
IT	SISSONE	2506	20170830	20180822	tG	-15	Almasio A. (SGL)
IT	SISSONE	2506	20180822	20190830	tG	-22	Almasio A. (SGL)
IT	SOCHES TSANTELEINA	1244	20170822	20180908	tG	-22	Pollicini F. (CGI), Borney S. (CGI)
IT	SOCHES TSANTELEINA	1244	20180908	20190914	tG	-21	Pollicini F. (CGI), Borney S. (CGI)
IT	SOLDA (VEDRETTA DI) / SULDENF.	660	20170823	20180822	tG	-19	Sartori G. (SGAA), Sampieri R. (SGAA)
IT	SOLDA (VEDRETTA DI) / SULDENF.	660	20180822	20190822	tG	-11	Sartori G. (SGAA), Seppi R. (SGAA)
IT	TIMORION	1282	20171008	20180923	tG	-5	Favre D. (CGI), Morra di Cella U. (ARPA)
IT	TIMORION	1282	20180923	20190916	tG	-14	Favre D. (CGI), Morra di Cella U. (ARPA)
IT	TORRENT	2384	20170818	20180818	tG	0	Pollicini F. (CGI)
IT	TORRENT	2384	20180818	20190818	tG	-7	Pollicini F. (CGI)
IT	TRAFOI (VEDR. DI) / TRAFOIER F.	2617	20170820	20180905	tG	-6	Sartori G. (SGAA), Seppi R. (SGAA), Sampieri R. (SGAA)
IT	TRAFOI (VEDR. DI) / TRAFOIER F.	2617	20180905	20190905	tG	-1	Barison G. (SGAA), Sampieri R. (SGAA)
IT	TRAJO	1278	20170923	20180912	tG	-35	Borre P. (CGI), Caminada C. (CGI), Frasca M. (CGI)
IT	TRAJO	1278	20180912	20190920	tG	-18	Borre P. (CGI), Caminada C. (CGI)
IT	TRIBOLAZIONE	1274	20170907	20180915	tG	-6	Bertoglio V. (CGI), Borre P. (CGI), Montis V. (CGI)
IT	TRIBOLAZIONE	1274	20180915	20190914	tG	-3	Bertoglio V. (CGI), Borre P. (CGI), Caminada C. (CGI)
IT	ULTIMA (VEDR.) / ULTENMARKTF.	633	20170826	20180925	tG	-20	Bruschi P. (SGAA)
IT	ULTIMA (VEDR.) / ULTENMARKTF.	633	20180925	20190831	tG	-5	Bruschi P. (SGAA)
IT	VALEILLE	1268	20160924	20180921	tG	-15	Borre P. (CGI), Caminada C. (CGI)
IT	VALEILLE	1268	20180921	20190924	tG	-5	Borre P. (CGI), Caminada C. (CGI)
IT	VALLELUNGA (VEDR. DI) / LANGTAU-FERERF.	659	20160925	20180916	tG	-111	Scaltriti A. (SGAA)
IT	VALLELUNGA (VEDR. DI) / LANGTAU-FERERF.	659	20180916	20190915	tG	-25	Scaltriti A. (SGAA)
IT	VENEROCOLO	665	20170930	20180916	tG	-40	Pagliardi P. (SGL), Rota Nodari F. (SGL)
IT	VENEROCOLO	665	20180916	20190921	tG	-29	Pagliardi P. (SGL), Triglia E. (SGL)
IT	VENTINA	629	20170924	20180930	tG	-44	Gussoni M. (SGL), Regazzoni A. (SGL)
IT	VENTINA	629	20180930	20191515	tG	-40	Gussoni M. (SGL), Regazzoni A. (SGL)
KG - Kyrgyzstan							
KG	BORDU	829	20170905	20180912	tG	-15	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	BORDU	829	20180912	20190907	tG	-10	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	KARA-BATKAK	813	20170905	20180818	cC	-8	Popovnin V. (MSU), Ermenbayev B. (TshMRC), Satylkanov R. (TshMRC)
KG	KARA-BATKAK	813	20180818	20190904	cC	-9	Popovnin V. (MSU), Ermenbayev B. (TshMRC), Satylkanov R. (TshMRC)
KG	SARY TOR (NO.356)	805	20170905	20180911	tG	-15	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	SARY TOR (NO.356)	805	20180911	20190906	tG	-12	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	TURGEN-AKSUU	13057	19650720	20190801		-900	Baikhadzhaev R. (KyrgyzHydromet)
KZ - Kazakhstan							
KZ	TS.TUYUKSUYSKIY	817	20160825	20180831	tG	-13	Kasatkin N. (IGNANKaz)
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	tG	-25	Kasatkin N. (IGNANKaz)
NO - Norway							
NO	AUSTERDALSBREEN	288	20170810	20180802	tG	-35	Elvehøy H. (NVE), Solnes P. (NVE)
NO	AUSTRE OKSTINDBREEN	3342	20160917	20190816	tG	-87	Elvehøy H. (NVE), Nesengmo K. (NVE)
NO	BLOMSTOELSKARDSBREEN	3339	20170926	20181011	tG	-31	Elvehøy H. (NVE), Probert J. (NVE)
NO	BLOMSTOELSKARDSBREEN	3339	20181011	20191004	tG	-40	Elvehøy H. (NVE), Probert J. (NVE)
NO	BOEVERBREEN	2298	20171009	20181006	tG	-92	Elvehøy H. (NVE), Bakke D. (NVE)
NO	BOEVERBREEN	2298	20181006	20191007	tG	-10	Elvehøy H. (NVE), Bakke D. (NVE)
NO	BONDHUSBREA	318	20171009	20181011	tG	5	Elvehøy H. (NVE), Knudsen G. (NVE)
NO	BONDHUSBREA	318	20181011	20190924	tG	-31	Elvehøy H. (NVE), Knudsen G. (NVE)
NO	BOTNABREA	2292	20170924	20190922	tG	-102	Elvehøy H. (NVE), Knudsen G. (NVE)
NO	BRENNDALSBREEN	2293	20161105	20181028	tG	-55	Elvehøy H. (NVE), Briksdal R. (NVE)
NO	BRENNDALSBREEN	2293	20181028	20191006	tG	-10	Elvehøy H. (NVE), Briksdal R. (NVE)
NO	BUERBREEN	315	20171102	20181019	tG	-20	Elvehøy H. (NVE), Buer M. (NVE)
NO	BUERBREEN	315	20181019	20191101	tG	-15	Elvehøy H. (NVE), Buer M. (NVE)
NO	ENGABREEN	298	20171121	20181025	tG	-140	Elvehøy H. (NVE)
NO	ENGABREEN	298	20181025	20190927	tG	-61	Elvehøy H. (NVE)
NO	FAABERGSTOELSBREEN	289	20171012	20180930	tG	1	Elvehøy H. (NVE), Åsen S. (NVE)
NO	FAABERGSTOELSBREEN	289	20180930	20190929	tG	-5	Elvehøy H. (NVE), Åsen S. (NVE)
NO	GRAAFJELLSBREA	1320	20171018	20181016	tG	-125	Elvehøy H. (NVE), Knudsen G. (NVE)
NO	GRAAFJELLSBREA	1320	20181016	20190923	tG	-82	Elvehøy H. (NVE), Knudsen G. (NVE)
NO	HAUGABREEN	4568	20171101	20181010	tG	-16	Kielland P. (NVE)
NO	HAUGABREEN	4568	20181010	20191015	tG	-7	Kielland P. (NVE)
NO	HELLSTUGUBREEN	300	20170919	20181016	tG	-16	Andreassen L. (NVE)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
NO	HELLSTUGUBREEN	300	20181016	20190812	tG	-12	Andreassen L. (NVE)
NO	JUVFONNE	3661	20170918	20181017	tG	-61	Andreassen L. (NVE)
NO	JUVFONNE	3661	20181017	20190827	tG	-9	Andreassen L. (NVE)
NO	KOLDEDALSBREEN	20253	20140921	20180919	tG	-40	Elvehøy H. (NVE)
NO	KOPPANGSBREEN	2309	20170906	20180902	tG	-38	Elvehøy H. (NVE), Skirnisson D. (NVE)
NO	KOPPANGSBREEN	2309	20180902	20190914	tG	-13	Elvehøy H. (NVE), Skirnisson D. (NVE)
NO	LANGFJORDJOEKELEN	323	20170929	20181012	tG	-36	Elvehøy H. (NVE), Jackson M. (NVE)
NO	LANGFJORDJOEKELEN	323	20181012	20190808	tG	-11	Elvehøy H. (NVE)
NO	LEIRBREEN	301	20171010	20181006	tG	-46	Elvehøy H. (NVE), Bakke D. (NVE)
NO	LEIRBREEN	301	20181006	20191007	tG	-28	Elvehøy H. (NVE), Bakke D. (NVE)
NO	MIDTDALSBREEN	2295	20170830	20180828	tG	-21	Nesje A. (NVE)
NO	MIDTDALSBREEN	2295	20180828	20190827	tG	-28	Nesje A. (NVE)
NO	MJOELKEDALSBREEN	4508	20151003	20180716	tG	-35	Elvehøy H. (NVE), Løvland B. (NVE)
NO	MJOELKEDALSBREEN	4508	20180716	20190924	tG	-31	Elvehøy H. (NVE)
NO	NIGARDSBREEN	290	20171016	20180915	tG	-81	Elvehøy H. (NVE), Åsen S. (NVE)
NO	NIGARDSBREEN	290	20180915	20190928	tG	-81	Elvehøy H. (NVE), Åsen S. (NVE)
NO	REMBESDALSKAAKA	2296	20171018	20181122	tG	-19	Elvehøy H. (NVE)
NO	REMBESDALSKAAKA	2296	20181122	20191105	tG	-27	Elvehøy H. (NVE)
NO	RUNDVASSBREEN	2670	20170927	20180827	tG	-20	Elvehøy H. (NVE), Kjøllmoen B. (NVE)
NO	RUNDVASSBREEN	2670	20180827	20190917	tG	-58	Elvehøy H. (NVE), Jackson M. (NVE)
NO	SKJELAATINDBREEN	10424	20160910	20190908	tG	-14	Elvehøy H. (NVE), Karlsen J. (NVE)
NO	STEGHOLTBREEN	313	20171018	20181003	tG	2	Elvehøy H. (NVE), Aasen J. (NVE)
NO	STEGHOLTBREEN	313	20181003	20190925	tG	-18	Elvehøy H. (NVE), Aasen J. (NVE)
NO	STEINDALSBREEN	2310	20170907	20180910	tG	-45	Elvehøy H. (NVE), Skirnisson D. (NVE)
NO	STEINDALSBREEN	2310	20180910	20191014	tG	-48	Elvehøy H. (NVE), Skirnisson D. (NVE)
NO	STORBREEN	302	20170927	20181016	tG	-28	Andreassen L. (NVE)
NO	STORBREEN	302	20181016	20190814	tG	-4	Andreassen L. (NVE)
NO	STORJUVBREEN	2308	20170923	20181005	tG	-22	Elvehøy H. (NVE), Bakke D. (NVE)
NO	STORJUVBREEN	2308	20181005	20190928	tG	-16	Elvehøy H. (NVE), Bakke D. (NVE)
NO	STORSTEINSFJELLBREEN	1329	20171010	20190915	tG	-63	Elvehøy H. (NVE), Sommerseth J. (NVE)
NO	STYGGEBREAN	4504	20171008	20181007	tG	-22	Elvehøy H. (NVE), Bakke D. (NVE)
NO	STYGGEBREAN	4504	20181007	20191004	tG	-26	Elvehøy H. (NVE), Bakke D. (NVE)
NO	STYGGEDALSBREEN	303	20171023	20181001	tG	-15	Elvehøy H. (NVE), Aasen J. (NVE)
NO	STYGGEDALSBREEN	303	20181001	20190923	tG	-22	Elvehøy H. (NVE), Aasen J. (NVE)
NO	SVELGJABREEN	3343	20170926	20181015	tG	-25	Elvehøy H. (NVE), Probert J. (NVE)
NO	SVELGJABREEN	3343	20181015	20191004	tG	-4	Elvehøy H. (NVE), Probert J. (NVE)
NO	SYDBREEN	3351	20170711	20180724	tG	-24	Elvehøy H. (NVE), Berg H. (NVE)
NO	SYDBREEN	3351	20180724	20190718	tG	-7	Elvehøy H. (NVE), Berg H. (NVE)
NO	TROLLBERGDALSBREEN	316	20160910	20190908	tG	-49	Elvehøy H. (NVE), Karlsen J. (NVE)
NO	TROLLKYRKJEBREEN	3606	20160925	20180808	tG	-22	Elvehøy H. (NVE), Klokk T. (NVE)
NO	TROLLKYRKJEBREEN	3606	20180808	20190901	tG	-16	Elvehøy H. (NVE), Klokk T. (NVE)
NO	TUFTEBREEN	3352	20171010	20180924	tG	-33	Elvehøy H. (NVE), Åsen S. (NVE)
NO	TUFTEBREEN	3352	20180924	20190922	tG	-8	Elvehøy H. (NVE), Åsen S. (NVE)
NO	VETLE SUPPHELLEBREEN	3607	20171102	20181122	tG	-6	Kielland P. (NVE)
NO	VETLE SUPPHELLEBREEN	3607	20181122	20191017	tG	-22	Kielland P. (NVE)
NZ - New Zealand							
NZ	BREWSTER	1597	20170309	20180310	aP	-10	Vargo L. (ARC)
NZ	BREWSTER	1597	20180310	20190320	aP	-12	Vargo L. (ARC)
NZ	FOX / TE MOEKA O TUAWE	1536	20170329	20181030	aP	-29	Purdie H. (UCant/DG)
NZ	FOX / TE MOEKA O TUAWE	1536	20181030	20191126	aP	-80	Purdie H. (UCant/DG)
NZ	FRANZ JOSEF / KA ROIMATA O HINE HUKATERE	899	20170309	20180310	aP	40	Anderson B. (ARC)
NZ	FRANZ JOSEF / KA ROIMATA O HINE HUKATERE	899	20180310	20190320	aP	-30	Anderson B. (ARC)
PE - Peru							
PE	ARTESONRAJU	3292	20179999	20189999		-7	Cochachin Rapre A. (AEGL/ANA)
PE	ARTESONRAJU	3292	20189999	20199999		-40	Cochachin Rapre A. (AEGL/ANA)
PE	GAJAP-YANACARCO	223	20179999	20189999		-14	Cochachin Rapre A. (AEGL/ANA)
PE	GAJAP-YANACARCO	223	20189999	20199999		-21	Cochachin Rapre A. (AEGL/ANA)
PE	PASTORURI	224	20179999	20189999		-10	Cochachin Rapre A. (AEGL/ANA)
PE	PASTORURI	224	20189999	20199999		-33	Cochachin Rapre A. (AEGL/ANA)
PE	SHALLAP	3293	20179999	20189999		-13	Cochachin Rapre A. (AEGL/ANA)
PE	SHALLAP	3293	20189999	20199999		-31	Cochachin Rapre A. (AEGL/ANA)
PE	URUASHRAJU	221	20179999	20189999		-13	Cochachin Rapre A. (AEGL/ANA)
PE	URUASHRAJU	221	20189999	20199999		-24	Cochachin Rapre A. (AEGL/ANA)
PE	YANAMAREY	226	20179999	20189999		-29	Cochachin Rapre A. (AEGL/ANA)
PE	YANAMAREY	226	20189999	20199999		-31	Cochachin Rapre A. (AEGL/ANA)
RU - Russia							
RU	DJANKUAT	726	20170903	20180828	cP	-23	Popovnin V. (MSU), Popovnin V. (RFBR), Aleynikov A. (MSU), Aleynikov A. (RFBR)
RU	DJANKUAT	726	20180828	20190920	cP	-24	Popovnin V. (MSU), Popovnin V. (RFBR), Aleynikov A. (MSU), Aleynikov A. (RFBR)
RU	GARABASHI	761	20170908	20180999	sP	-25	Smirnov A. (RAS/IG)
RU	GARABASHI	761	20180999	20190999	sP	-26	Smirnov A. (RAS/IG)
SE - Sweden							
SE	ISFALLSGLACIAEREN	333	20160803	20180806	aP	-29	Holmlund E. (SU/INK)
SE	KARSOJIETNA	330	20170808	20180802	aP	-12	Holmlund E. (SU/INK)
SE	KASKASATJ SE	329	20140813	20180806	aP	-26	Holmlund E. (SU/INK)
SE	MIKKAJEKNA	338	20150815	20180802	aP	-54	Holmlund P. (SU/INK)
SE	PARTEJEKNA	327	20130811	20180818	aP	-108	Holmlund P. (SU/INK)
SE	RABOTS GLACIAER	334	20130824	20180804	aP	-54	Holmlund E. (SU/INK)
SE	SALAJEKNA	341	20160826	20180816	aP	-37	Holmlund E. (SU/INK)
SE	STORGLACIAEREN	332	20160803	20180803	aP	-16	Holmlund E. (SU/INK)
SE	SUOTTASJEKNA	336	20140811	20180802	aP	-38	Holmlund E. (SU/INK)
SJ - Svalbard (Norway)							
SJ	AUSTRE LOVENBREEN	3812	20171005	20180929	cC	-X	Bernard E. (CNRS), Griselin M. (CNRS), Tolle F. (CNRS), Friedt J. (CNRS)
SJ	HANSBREEN	306	20170817	20180823	sP	50	Blaszczyk M. (US/IES)
SJ	HANSBREEN	306	20170817	20190818	sP	0	Blaszczyk M. (US/IES)
US - United States of America							
US	BOULDER	1364	20110927	20190923	tG	-255	Pelto M. (NCGCP)
US	COLEMAN	1369	20140806	20190809	tG	-55	Pelto M. (NCGCP)
US	COLUMBIA (2057)	76	20170812	20180813	tG	-25	Pelto M. (NCGCP)

PU	GLACIER_NAME	WGMS_ID	FROM	TO	METHOD	FV	INVESTIGATORS_(SPONS_AGENCY)
US	COLUMBIA (2057)	76	20180813	20190812	tG	-32	Pelto M. (NCGCP)
US	DEMING	1368	20140806	20180806	tG	-135	Pelto M. (NCGCP)
US	EASTON	1367	20170803	20180803	tG	-15	Pelto M. (NCGCP)
US	EASTON	1367	20180803	20190802	tG	-18	Pelto M. (NCGCP)
US	LOWER CURTIS	77	20170809	20180809	tG	-10	Pelto M. (NCGCP)
US	LOWER CURTIS	77	20180809	20190805	tG	-11	Pelto M. (NCGCP)
US	RAINBOW	79	20170806	20180807	tG	-15	Pelto M. (NCGCP)
US	SHOLES	3295	20170807	20180806	tG	-25	Pelto M. (NCGCP)
US	SHOLES	3295	20180806	20190808	tG	-8	Pelto M. (NCGCP)
US	TAKU	124	20130904	20181001		-59	McNeil C. (USGS-F)

APPENDIX - Table 3

MASS BALANCE SUMMARY DATA 2018–2019

PU	Political unit, alphabetic 2-digit country code (cf. www.iso.org)
GLACIER NAME	Name of the glacier in capital letters, cf. Appendix Table 1
WGMS ID	Key identifier of the glacier, cf. Appendix Table 1
SYS	System of glaciological measurement (cf. Cogley et al., 2011)
	FLO: floating-date system
	FXD: fixed-date system
	STR: stratigraphic system
	COM: combined system; usually of STR and FXD according to Mayo et al. (1972)
	OTH: other system
BEGIN PERIOD	Starting date of balance year, in the format YYYYMMDD*
END WINTER	Ending date of winter season, in the format YYYYMMDD*
END PERIOD	Ending date of balance year, in the format YYYYMMDD*
BW	Specific winter balance in mm water equivalent
BS	Specific summer balance in mm water equivalent
BA	Specific annual balance in mm water equivalent
ELA	Equilibrium line altitude in metres above sea level
AAR	Ratio of accumulation area to total area of the glacier in percent
INVESTIGATORS (SPONS_AGENCY)	Names of the investigators and their sponsoring agencies (cf. Section 8)

*Unknown month or day are each replaced by „99“

PU	GLACIER_NAME	WGMS_ID	SYS	BEGIN	END_WINTER	END	BW	BS	BA	ELA	AAR	INVESTIGATORS_(SPONS_AGENCY)
AQ - Antarctica												
AQ	BAHIA DEL DIABLO	2665	COM	20170301		20180228			-130	350	59	Marinsek S. (IAA-DG), Seco J. (IAA-DG), Ermolin E. (IAA-DG)
AQ	BAHIA DEL DIABLO	2665	FXD	2018		2019			-40	340	60	Marinsek S. (IAA-DG), Seco J. (IAA-DG), Ermolin E. (IAA-DG)
AQ	HURD	3367	COM	2017		2018	340	-900	-560	285	19	Navarro F. (UPM/ETSIT)
AQ	HURD	3367	COM	2018		2019	560	-370	190	155	76	Navarro F. (UPM/ETSIT)
AQ	JOHNSONS	3366	COM	2017		2018	520	-600	-80	200	52	Navarro F. (UPM/ETSIT)
AQ	JOHNSONS	3366	COM	2018		2019	840	-290	550	120	93	Navarro F. (UPM/ETSIT)
AR - Argentina												
AR	AGUA NEGRA	4532	FLO	20170405	20171105	20180415	352	-1225	-873	5110	15	Pitte P. (IANIGLA), Gargantini H. (IANIGLA)
AR	AGUA NEGRA	4532	FLO	20180415	20181110	20190320	659	-822	-163	5040	28	Pitte P. (IANIGLA), Gargantini H. (IANIGLA)
AR	AZUFRE	2851	FLO	20170331	20171222	20180512	1851	-4453	-2602	>3950	0	Pitte P. (IANIGLA), Zalazar L. (IANIGLA)
AR	AZUFRE	2851	FLO	20180512	20181115	20190405	2001	-5309	-3308	>3950	0	Pitte P. (IANIGLA), Zalazar L. (IANIGLA)
AR	BROWN SUPERIOR	3903		2017		2018			-1511			Cabrera G. (IANIGLA)
AR	BROWN SUPERIOR	3903		2018		2019			-956			Cabrera G. (IANIGLA)
AR	CONCONTA NORTE	3902		2017		2018			-2458			Cabrera G. (IANIGLA)
AR	CONCONTA NORTE	3902		2018		2019			-1162			Cabrera G. (IANIGLA)
AR	DE LOS TRES	1675	FLO	20170425	20171210	20180425	1893	-2807	-914	1575	74	Pitte P. (IANIGLA), Ferri Hidalgo L. (IANIGLA)
AR	DE LOS TRES	1675	FLO	20180425	20181006	2019	1658					Pitte P. (IANIGLA), Ferri Hidalgo L. (IANIGLA)
AR	LOS AMARILLOS	3904		2017		2018			248			Cabrera G. (IANIGLA)
AR	LOS AMARILLOS	3904		2018		2019			-1485			Cabrera G. (IANIGLA)
AR	MARTIAL ESTE	2000	COM	20170401	20171017	20180331	928	-1153	-225	1076	46	Iturraspe R. (UNTDF), Camargo S. (GTF), Strelin J. (IAA-UNC)
AR	MARTIAL ESTE	2000	COM	20180401	20181011	20190321	816	-1310	-494	1090	37	Iturraspe R. (UNTDF), Camargo S. (GTF), Strelin J. (IAA-UNC)
AT - Austria												
AT	GOLDBERG K.	1305	COM	20170901	20180423	20180920	2069	-3766	-1697	>3100	1	Hynek B. (ZAMG), Neureiter A. (ZAMG)
AT	GOLDBERG K.	1305	COM	20180920	20190424	20190920	1906	-2751	-845	3050	18	Hynek B. (ZAMG), Neureiter A. (ZAMG)
AT	HALLSTAETTER G.	535		20171001	20180430	20180930	2321	-4174	-1853	2808	11	Helfricht K., Reingruber K. (FGUA, EnergieAG)
AT	HALLSTAETTER G.	535	FXD	20181001	20190430	20190930	2446	-3000	-554	2580	46	Helfricht K., Reingruber K. (FGUA, EnergieAG)
AT	HINTEREIS F.	491	FXD	20171001	20180430	20180930	1207	-3170	-1963	3507	7	Juen I. (ACINN)
AT	HINTEREIS F.	491	FXD	20181001	20190430	20190930	1650	-2330	-680	3213	36	Prinz R. (ACINN)
AT	JAMTAL F.	480		20171001	20180430	20180930	1439	-3715	-2276	>	0	Fischer A. (HD/LT)
AT	JAMTAL F.	480		20181001	20190430	20190930	1560	-2796	-1237	>	9	Fischer A. (HD/LT)
AT	KESSELWAND F.	507	FXD	20171001	20180430	20180930			-1619	3406	17	Juen I. (ACINN)
AT	KESSELWAND F.	507	FXD	20181001	20190430	20190930			-337	3222	38	Prinz R. (ACINN)
AT	KLEINFLEISS K.	547	COM	20170901	20180422	20180919	1777	-3154	-1377	>3050	0	Hynek B. (ZAMG), Neureiter A. (ZAMG)
AT	KLEINFLEISS K.	547	COM	20180919	20190425	20190919	1696	-2419	-723	>3050	19	Hynek B. (ZAMG), Neureiter A. (ZAMG)
AT	PASTERZE	566	COM	20171014		20180930			-1420	3130	32	Neureiter A. (ZAMG)
AT	PASTERZE	566		2018		2019			-1100			Neureiter A. (ZAMG)
AT	SEEKARLES F.	10459	FXD	20171001	20180430	20180930	1185	-2695	-1510	>3255	9	Strudl M. (private)
AT	SEEKARLES F.	10459	FXD	20181001	20190430	20190930	1311	-2143	-832	3200	16	Strudl M. (private)
AT	STUBACHER SONNBLICK K.	573	STR	20170903		20180930			-1507	2955	7	Wiesenegger H. (HD/SB), Slupetzky H. (HD/SB)
AT	STUBACHER SONNBLICK K.	573	STR	20181001		20190923			-699	2950	26	Wiesenegger H. (HD/SB), Slupetzky H. (HD/SB)
AT	VENEDIGER K.	10460		20171001	20180430	20180930	1392	-2437	-1045	2993	41	Seiser B. (HD/SB)
AT	VENEDIGER K.	10460	FXD	20181001	20190430	20190930	1735	-2240	-505	2907	42	Seiser B. (HD/SB)
AT	VERNAGT F.	489	FXD	20171001		20180930	1072	-2490	-1419	3306	9	Mayer C. (GGBAS)
AT	VERNAGT F.	489	FXD	20181001	20190501	20190930	1090	-2020	-929	3344	23	Mayer C. (GGBAS)
AT	WURTEN K.	545	COM	20171019		20180918			-1957	3050	5	Reisenhofer S. (ZAMG)
AT	WURTEN K.	545		2018		2019			-1232			Reisenhofer S. (ZAMG)
AT	ZETTALUNITZ/MULLWITZ K.	578		20171001	20180430	20180930	1148	-2387	-1239	>	13	Stocker-Waldhuber M. (HD/LT)
AT	ZETTALUNITZ/MULLWITZ K.	578	FXD	20181001	20190430	20190930	1751	-2362	-611		22	Stocker-Waldhuber M. (HD/LT)
BO - Bolivia												
BO	CHARQUINI SUR	2667	FXD	20170830	20170921	20180901			-25	5180	33	Soruco A. (UMSA), Rabatel A. (IGE), Sicart J. (UG/IRD), Condom T. (UG/IRD), Ginot P. (UG/IRD)
BO	ZONGO	1503	FXD	20170830	20170921	20180901			284	5226	78	Soruco A. (UMSA), Rabatel A. (IGE), Sicart J. (UG/IRD), Condom T. (UG/IRD), Ginot P. (UG/IRD)
CA - Canada												
CA	CONRAD	10498	FLO	20170917	20180426	20181014	1827	-2427	-600	2645	42	Pelto B. (CBT)
CA	CONRAD	10498	FLO	20181014	20190508	2019	1527					Pelto B. (CBT)
CA	DEVON ICE CAP NW	39	STR	2017		2018	130	-84	46	930	74	Burgess D. (NRCan)
CA	DEVON ICE CAP NW	39		2018		2019			-521	1550	11	Burgess D. (NRCan)
CA	HELM	45		20171001	20180506	20180928	1940	-3350	-1410	2090	2	Ednie M. (NRCan)
CA	HELM	45	FLO	20180928	20190428	20190925	1670	-3660	-1990	2090		Ednie M. (NRCan)
CA	ILLECILLEWAET	1400	FLO	20170927	20180518	20181005	1775	-2821	-1046	2570	36	Pelto B. (CBT)
CA	ILLECILLEWAET	1400	FLO	20181005		20191001			-710	2580	45	Pelto B. (PC)
CA	KOKANEE	23	FLO	20170919	20180426	20181014	2252	-2558	-306	2580	62	Pelto B. (CBT)
CA	KOKANEE	23	FLO	20181014		20190911			-1006	2770	22	Pelto B. (BC-Parks)
CA	MEIGHEN ICE CAP	16	STR	2017		2018	161	38	199	<90	100	Burgess D. (NRCan)
CA	MEIGHEN ICE CAP	16		2018		2019			-826	>270	0	Burgess D. (NRCan)
CA	MELVILLE SOUTH ICE CAP	3690	STR	2017		2018	302	-81	221	<526	100	Burgess D. (NRCan)
CA	MELVILLE SOUTH ICE CAP	3690		2018		2019			-360	>720	0	
CA	NORDIC	10497	FLO	20170927	20180502	20181014	2222	-2712	-490	2600	32	Pelto B. (CBT)
CA	NORDIC	10497	FLO	20181014	20190430	2019	1752					Pelto B. (CBT)
CA	PEYTO	57		20171026	20180428	20181019	920	-1940	-1020	2800	11	Ednie M. (NRCan)
CA	PLACE	41		20170927	20180507	20180929	1760	-3330	-1560	2450	1	Ednie M. (NRCan)
CA	PLACE	41	FLO	20180929	20190425	20190926	1290	-3020	-1730	2450		Ednie M. (NRCan)
CA	WHITE	0	STR	20171001		20180930			8	936	75	Thomson L. (DGP/QU)
CA	ZILLMER	10496	FLO	20170822	20180429	20180917	1803	-2563	-760	2470	40	Pelto B. (CBT)
CH - Switzerland												
CH	ADLER	3801	FLO	20170921	20180418	20180926	1304	-1762	-458	3475	44	Huss M. (DGUF), Salzmann N. (DGUF), Linsbauer A. (GIUZ)
CH	ADLER	3801	FLO	20180926	20190417	20190917	1023	-1854	-831	3625	26	Huss M. (DGUF), Salzmann N. (DGUF), Linsbauer A. (GIUZ)
CH	ALLALIN	394	FLO	20170821	20180430	20180906	1140	-1941	-801	3605	24	Bauder A. (VAW)
CH	ALLALIN	394	FLO	20180906		20190830			-559	3445	41	Bauder A. (VAW)
CH	BASODINO	463	FLO	20170908	20180507	20181026	2121	-3561	-1440	3155	0	Kappenberger G. (VAW)
CH	BASODINO	463	FLO	20181026	20190507	20190917	2418	-2749	-331	2975	30	Kappenberger G. (VAW)
CH	CLARIDENFIRN	2660	FLO	20170923	20180511	20181007	1980	-3460	-1480	2945	24	Steinegger U. (VAW)
CH	CLARIDENFIRN	2660	FLO	20181006	20190605	20190929	2331	-3338	-1007	2925	29	Steinegger U. (VAW)
CH	CORBASSIERE	366	FLO	20170922	20180000	20180918	1325	-2247	-922	3385	31	Bauder A. (VAW)
CH	CORBASSIERE	366	FLO	20180918		20190928			-887	3395	30	Bauder A. (VAW)
CH	CORVATSCH SOUTH	4535	FLO	20170913	20180407	20180916	835	-2667	-1832	3352	5	Huss M. (DGUF)
CH	CORVATSCH SOUTH	4535	FLO	20180916	20190422	20190921	854	-2937	-2083	3427	0	Huss M. (DGUF)
CH	FINDELEN	389	FLO	20170921	20180418	20180926	1530	-2253	-723	3355	46	Huss M. (DGUF), Salzmann N. (DGUF), Linsbauer A. (GIUZ)
CH	FINDELEN	389	FLO	20180926	20190417	20190917	1477	-1721	-244	3295	56	Huss M. (DGUF), Salzmann N. (DGUF), Linsbauer A. (DGUF)

PU	GLACIER_NAME	WGMS_ID	SYS	BEGIN	END_WINTER	END	BW	BS	BA	ELA	AAR	INVESTIGATORS_(SPONS_AGENCY)
CH	GIETRO	367	FLO	20170921	20180000	20180917	1460	-2124	-664	3245	45	Bauder A. (VAW)
CH	GIETRO	367	FLO	20180917		20190927			-1318	3355	13	Bauder A. (VAW)
CH	GRIES	359	FLO	20170907	20180417	20181005	2067	-4112	-2045	3275	0	Funk M. (VAW)
CH	GRIES	359	FLO	20181005	20190415	20190909	2000	-2865	-865	3095	7	Funk M. (VAW)
CH	HOHLAUB	3332	FLO	20170821	20180430	20180906	1336	-1959	-623	3355	30	Bauder A. (VAW)
CH	HOHLAUB	3332	FLO	20180906		20190830			-1118	3395	25	Bauder A. (VAW)
CH	MURTEL VADRET DAL	4339	FLO	20170913	20180407	20180916	1215	-2448	-1233	3237	12	Huss M. (DGUF)
CH	MURTEL VADRET DAL	4339	FLO	20180916	20190422	20190921	1179	-2478	-1299	3247	8	Huss M. (DGUF)
CH	PIZOL	417	FLO	20170929	20180324	20181016	1994	-3841	-1847	2757	0	Huss M. (DGUF), Huss M. (VAW)
CH	PIZOL	417	FLO	20181016	20190330	20190922	1622	-2449	-827	2727	5	Huss M. (DGUF), Huss M. (VAW)
CH	PLAINE MORTE, GLACIER DE LA	4630	FLO	20171011	20180406	20180930	2303	-4404	-2101	2895	0	Huss M. (DGUF)
CH	PLAINE MORTE, GLACIER DE LA	4630	FLO	20180930	20190402	20190930	1619	-3388	-1769	2825	0	Huss M. (DGUF)
CH	RHONE	473	FLO	20170926	20180424	20180912	2171	-3171	-1000	3055	39	Bauder A. (VAW)
CH	RHONE	473	FLO	20180912	20190418	20190812	1941	-2714	-773	2935	55	Bauder A. (VAW)
CH	SANKT ANNA	432	FLO	20170924	20180419	20180920	1955	-3032	-1077	2842	10	Huss M. (DGUF)
CH	SANKT ANNA	432	FLO	20180920	20190510	20190919	2503	-2848	-345	2817	23	Huss M. (DGUF)
CH	SCHWARZBACH	4340	FLO	20170924	20180419	20180920	2569	-4407	-1838	2832	0	Huss M. (DGUF)
CH	SCHWARZBACH	4340	FLO	20180920	20190510	20190919	2541	-2703	-162	2797	46	Huss M. (DGUF)
CH	SCHWARZBERG	395	FLO	20170821	20180430	20180906	1778	-2681	-903	3165	32	Bauder A. (VAW)
CH	SCHWARZBERG	395	FLO	20180906		20190830			-776	3175	31	Bauder A. (VAW)
CH	SEX ROUGE	454	FLO	20170908	20180425	20180913	2110	-3768	-1658	2877	0	Huss M. (DGUF)
CH	SEX ROUGE	454	FLO	20180913	20190501	20190915	1817	-3707	-1890	2882	0	Huss M. (DGUF)
CH	SILVRETTA	408	FLO	20170930	20180519	20180908	1669	-3058	-1389	3025	1	Bauder A. (VAW)
CH	SILVRETTA	408	FLO	20180908	20190525	20190920	2191	-3648	-1457	3015	2	Bauder A. (VAW)
CH	TSANFLEURON	371	FLO	20170908	20180425	20181010	2584	-5076	-2492	2975	0	Huss M. (DGUF)
CH	TSANFLEURON	371	FLO	20181010	20190501	20190915	2077	-3559	-1482	2975	0	Huss M. (DGUF)
CL - Chile												
CL	AMARILLO	3905		2017		2018			893			Cabrera G. (IANIGLA)
CL	AMARILLO	3905		2018		2019			-2632			Cabrera G. (IANIGLA)
CL	ECHAURREN NORTE	1344		2017		2018	1378	-4970	-3592			Buglio F. (DGA), Huenante J. (DGA), Casassa G. (DGA)
CL	ECHAURREN NORTE	1344		2018		2019	1047	-3293	-2246			Buglio F. (DGA), Huenante J. (DGA), Casassa G. (DGA)
CL	MOCHO CHOSHUENCO SE	3972		20170412		20180503			-272	1946		Schaefer M. (UACH)
CL	MOCHO CHOSHUENCO SE	3972		20180503		20190505			-889	1939		Schaefer M. (UACH)
CN - China												
CN	PARLUNG NO. 94	3987	FLO	20171006		20180917			-1990	5400	30	Li S. (CAS/ITPR), Yang W. (CAS/ITPR)
CN	PARLUNG NO. 94	3987	FLO	20180917		20190918			-1570	5489	8	Li S. (CAS/ITPR), Yang W. (CAS/ITPR)
CN	URUMQI GLACIER NO. 1	853	FXD	20170827	20180427	20180828	135	-847	-711	4190	19	Li H. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1	853	FXD	20180828	20190429	20190828	165	-436	-272	4047	45	Li H. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	FXD	20170827	20180427	20180828	85	-902	-817	4180	16	Li H. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	FXD	20180828	20190429	20190828	150	-498	-348	4012	43	Li H. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	FXD	20170827	20180427	20180828	225	-746	-521	4200	25	Li H. (CAREERI), Li Z. (CAREERI)
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	FXD	20180828	20190429	20190828	192	-328	-136	4081	50	Li H. (CAREERI), Li Z. (CAREERI)
CO - Colombia												
CO	CONEJERAS	2721	FXD	20180131		20190212			-3411	>4826	0	Ceballos Lievano J. (IDEAM), Ospina A. (IDEAM)
CO	CONEJERAS	2721	FLO	20190212		20200128			-4982	>4911	0	Ceballos Lievano J. (IDEAM), Ospina A. (IDEAM)
CO	RITACUBA BLANCO	2763	FXD	20180214		20190223			656	5027	69	Ceballos Lievano J. (IDEAM), Rojas F. (IDEAM)
CO	RITACUBA BLANCO	2763	FLO	20190223		20191202			384	4984	68	Ceballos Lievano J. (IDEAM), Rojas F. (IDEAM)
EC - Ecuador												
EC	ANTIZANA15ALPHA	1624	FXD	20180104		20181227			-277	5138	67	Cáceres Correa B. (INAMHI)
EC	ANTIZANA15ALPHA	1624	FXD	20181227		20200106			-1047	5152	65	Cáceres Correa B. (INAMHI)
ES - Spain												
ES	MALADETA	942	FXD	20171028	20180614	20181004			257	3092	46	Cobos G. (UPV)
ES	MALADETA	942	FXD	20181004	20190626	20191025			-1582	>3200	0	Cobos G. (UPV)
FR - France												
FR	ARGENTIERE	354	STR	20170929		20181003			-1408			Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	ARGENTIERE	354	STR	20181003		20191004			-1428			Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	GEBROULAZ	352	STR	20170909	20180428	20180926			-1240			Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	GEBROULAZ	352	STR	20182609		20191014			-1660			Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	OSSOUE	2867	STR	20171008	20180526	20181003	3270	-4180	-910		0	René P. (AM)
FR	OSSOUE	2867	STR	20181003	20190530	20191005	2410	-5100	-2690			René P. (AM)
FR	SAINT SORLIN	356	STR	20170926	20180417	20181012			-2020			Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	SAINT SORLIN	356	STR	20181012		20191004			-2880			Six D. (CNRS-UGA), Vincent C. (CNRS-UGA)
FR	SARENNES	357	STR	20171012	20180413	20181025	2480	-4440	-1960	>2973	0	Thibert E. (IRSTEA), Bonnefoy M. (IRSTEA)
FR	SARENNES	357	STR	20182510	20190429	20191022	1270	-4410	-3140			Thibert E. (INRAE), Bonnefoy M. (INRAE), Ravanat X. (INRAE)
GL - Greenland												
GL	FREYA	3350	FLO	20170901	20180425	20180912	1681	-373	1308	<200	100	Hynek B. (ZAMG), Hynek B. (UG/GRS)
GL	FREYA	3350	FLO	20180901	20190427	20190901	309	-1059	-750	>1300	0	Hynek B. (ZAMG), Hynek B. (UG/GRS)
GL	MITTIVAKKAT	1629		2017		2018			-360	600	41	Knudsen N. (DESA), Mernild S. (NERSC), de Villiers S. (HVL)
GL	MITTIVAKKAT	1629		2018		2019			-1640	>900	0	Knudsen N. (DESA), Mernild S. (NERSC), de Villiers S. (HVL)
GL	QASIGIANNGUIT	4566		20170911	20180503	20180920	1127	-1459	-332	>1000	0	Langley K. (GEM-CB), Abermann J. (GEM-CB)
GL	QASIGIANNGUIT	4566		20180920	20190514	20190912	1012	-2784	-1772	>1000	0	Langley K. (GEM-CB)
IN - India												
IN	BARA SHIGRI	2920		2017		2018			-820			Sharma P. (NCPOR)
IN	BARA SHIGRI	2920		2018		2019			380			Sharma P. (NCPOR)
IN	BATAL	7182		2017		2018			-540			Sharma P. (NCPOR)
IN	BATAL	7182		2018		2019			50			Sharma P. (NCPOR)
IN	CHHOTA SHIGRI	2921		2017		20180915	1060	-1620	-400	5080	47	Ramanathan A. (JNU/SES)
IN	CHHOTA SHIGRI	2921		2018		20190928	1820	-1280	537	4930	70	Ramanathan A. (JNU/SES)
IN	GEPANG GATH	10475		2017		2018			-1510			Sharma P. (NCPOR)
IN	GEPANG GATH	10475		2018		2019			250			Sharma P. (NCPOR)
IN	PENSILUNGPA (GLACIER NO. 10)	3655		2017		2018			-560			Mehta M. (WIHG)
IN	SAMUDRA TAPU	3635		2017		2018			-1560			Sharma P. (NCPOR)
IN	SAMUDRA TAPU	3635		2018		2019			-220			Sharma P. (NCPOR)
IN	STOK	10499		20171014		20181010			-630	5578	63	Ramanathan A. (JNU/SES)
IN	STOK	10499		20181010		20190924			-10	5471	70	Ramanathan A. (JNU/SES)
IN	SUTRI DHAKA	10476		2017		2018			-1340			Sharma P. (NCPOR)
IN	SUTRI DHAKA	10476		2018		2019			210			Sharma P. (NCPOR)

PU	GLACIER_NAME	WGMS_ID	SYS	BEGIN	END_WINTER	END	BW	BS	BA	ELA	AAR	INVESTIGATORS_(SPONS_AGENCY)
IS - Iceland												
IS	BRUARJOKULL	3067		2017		2018	1758	-1696	62	1190	66	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	BRUARJOKULL	3067		2018		2019		-2139	-304	1220	57	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	DYNGJUJOKULL	3068		2017		2018	1590	-1514	76	1335	65	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	DYNGJUJOKULL	3068		2018		2019		-2209	-379	1415	59	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	EYJABAKKAJOKULL	3069		2017		2018	2088	-2478	-390	1115	53	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	EYJABAKKAJOKULL	3069		2018		2019		-2554	-728	1150	40	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	HOFSJOKULL E	3088	FLO	20171003	20183105	20181008	1930	-1590	340	1100	58	Þorsteinsson Þ. (IMO)
IS	HOFSJOKULL E	3088	FLO	20181009	20190502	20191106	1230	-2800	-1570	1300	37	Þorsteinsson Þ. (IMO)
IS	HOFSJOKULL N	3089	FLO	20171004	20183105	20181009	1580	-1340	240	1200	60	Þorsteinsson Þ. (IMO)
IS	HOFSJOKULL N	3089	FLO	20181009	20190501	20191105	1210	-2540	-1320	1380	24	Þorsteinsson Þ. (IMO)
IS	HOFSJOKULL SW	3090	FLO	20171005	20183105	20181009	2030	-1180	850	1190	70	Þorsteinsson Þ. (IMO)
IS	HOFSJOKULL SW	3090	FLO	20181008	20190430	20191105	1340	-2260	-920	1390	47	Þorsteinsson Þ. (IMO)
IS	KOLDUKVISLARJ.	3096		2017		2018	1646	-1323	323	1340	62	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	KOLDUKVISLARJ.	3096		2018		2019		-2920	-1507	1550	38	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	LANGJOKULL ICE CAP	3660		2017		2018	1700	-1739	-39		55	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	LANGJOKULL ICE CAP	3660		2018		2019		-4020	-2230		23	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	TUNGNAARJOKULL	3126		2017		2018	1580	-1900	-320	1175	58	Pálsson F. (IES), Gunnarsson A. (NPC)
IS	TUNGNAARJOKULL	3126		2018		2019		-3402	-1914	1415	25	Pálsson F. (IES), Gunnarsson A. (NPC)
IT - Italy												
IT	CAMPO SETT.	1106	FLO	20171011	20180414	20180909			-1325	3085	16	Scotti R. (SGL), Colombarolli D. (SGL), Bera A. (SGL)
IT	CAMPO SETT.	1106	FLO	20180909	20190411	20190917			-1192	3080	25	Scotti R. (SGL), Colombarolli D. (SGL), Bera A. (SGL)
IT	CARESER	635	FLO	20170914	20180521	20180915	865	-2846	-1981	>3268	0	Carturan L. (UNIPD/TeSAF), Trenti A. (MeteoTrentino)
IT	CARESER	635	FLO	20180915	20190620	20190921	1292	-2724	-1432	>3268	1	Carturan L. (UNIPD/TeSAF), Trenti A. (MeteoTrentino)
IT	CIARDONEY	1264	COM	20170906	20180615	20180910	1990	-3440	-1450	>3150	0	Mercalli L. (SMI), Cat Berro D. (SMI)
IT	CIARDONEY	1264	COM	20180910	20190617	20190913	1780	-3430	-1650	>3150	0	Mercalli L. (SMI), Cat Berro D. (SMI)
IT	GRAND ETRET	1238		2017		2018	2048	-3061	-653			Rossotto A. (PNGP)
IT	GRAND ETRET	1238		2018		2019	2398	-2690	-292			Rossotto A. (PNGP)
IT	LA MARE (VEDRETTA DE)	636	FLO	20170908	20180525	20180912	1142	-2327	-1185	3562	8	Carturan L. (UNIPD/TeSAF)
IT	LA MARE (VEDRETTA DE)	636	FLO	20180912	20190615	20190920	816	-1868	-1052	>3587	10	Carturan L. (UNIPD/TeSAF)
IT	LUPO	1138	FLO	20171008	20180414	20181014	2859	-4610	-1751	>2760	1	Scotti R. (SGL), Ruffoni M. (SGL), Porta R. (SGL), Oreggioni M. (SGL)
IT	LUPO	1138	FLO	20181014	20190411	20191014	4129	-4508	-379	2600	29	Scotti R. (SGL), Porta R. (SGL), Oreggioni M. (SGL), Manni M. (SGL)
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	FLO	20170927	20180603	20180928	1183	-2972	-1789	3283	2	Franchi G. (UI/HA)
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	FLO	20180928	20190523	20190927	1580	-2525	-945	3274	5	Franchi G. (UI/HA)
IT	PENDENTE (VEDR.) / HANGENDERF.	675	FLO	20170927	20180603	20180928	1325	-3554	-2229	>2950	0	Franchi G. (UI/HA)
IT	PENDENTE (VEDR.) / HANGENDERF.	675	FLO	20180928	20190523	20190927	1819	-2867	-1048	2938	2	Franchi G. (UI/HA)
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	FXD	20170922	20180705	20180927	1207	-2572	-1365	>3325	0	Dinale R. (UI/HA), Di Lullo A. (UI/HA)
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	FXD	20180927	20190502	20190922			-1140	>3325	0	Dinale R. (UI/HA), Di Lullo A. (UI/HA)
IT	SURETTA MERID.	2488	FLO	20171014	20180414	20181021	2009	-4450	-2441	>2925	0	Scotti R. (SGL), Villa F. (SGL), Gallo P. (SGL), Alberti A. (SGL)
IT	SURETTA MERID.	2488	FLO	20181021	20190411	20190925	3161	-3305	-144	2770	54	Scotti R. (SGL), Gallo P. (SGL), Villa F. (SGL)
IT	TIMORION	1282	FLO	20170922	20180517	20181019	1096	-2165	-1069	>3485	0	Morra di Cella U. (ARPA)
IT	TIMORION	1282	FLO	20181019	20190530	20190917	900	-2226	-1326	3435	24	Morra di Cella U. (ARPA)
JP - Japan												
JP	HAMAGURI YUKI	897		20171005	20180608	20181013	6955	-8745	-1790			Fujita K. (DHAS), Fukui K. (DHAS)
KG - Kyrgyzstan												
KG	ABRAMOV	732	FXD	20171001		20180930	2025	-1969	56	4195	57	Barandun M. (DGUF), Barandun M. (CAIAG)
KG	ABRAMOV	732	FXD	20180930		20190930	1434		-660	4245	75	Barandun M. (DGUF), Belekov S. (KyrgyzHydromet), Kenzhebaev R. (CAIAG)
KG	BATYSH SOOK/SYEK ZAPADNIY	781	FLO	20171001		20180930	341	-1085	-743	4375	20	Kenzhebaev R. (CAIAG), Barandun M. (DGUF), Usubaliev R. (CAIAG), Azisov E. (CAIAG)
KG	BATYSH SOOK/SYEK ZAPADNIY	781	FLO	20180901		20190801	1318	-2367	-1048	4395	7	Kenzhebaev R. (CAIAG), Barandun M. (DGUF), Usubaliev R. (CAIAG), Azisov E. (CAIAG)
KG	BORDU	829	STR	20170905	20180516	20180912	320	-1190	-870	4450	12	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	BORDU	829	STR	20180912	20190508	20190907	330	-1290	-960	4440	12	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	FLO	20170909		20180901	214	-705	-491	4295	48	Kenzhebaev R. (CAIAG), Barandun M. (DGUF), Usubaliev R. (CAIAG), Azisov E. (CAIAG), Hoelzle M. (DGUF)
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	FLO	20180901		20190805	101	-1017	-916	4345	11	Kenzhebaev R. (CAIAG), Barandun M. (DGUF), Usubaliev R. (CAIAG), Azisov E. (CAIAG), Hoelzle M. (DGUF)
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	FLO	20170818		20180815			-278	4041	39	Azisov E. (CAIAG), Usubaliev R. (CAIAG), Osmonov A. (CAIAG), Kenzhebaev R. (CAIAG), Esenaman uulu M. (CAIAG)
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	FLO	20180815		20190807			-433	4079	26	Azisov E. (CAIAG), Usubaliev R. (CAIAG), Osmonov A. (CAIAG), Kenzhebaev R. (CAIAG), Esenaman uulu M. (CAIAG)
KG	GOLUBIN	753	FXD	20171001		20180930	927	-977	-50	3785	72	Azisov E. (CAIAG), Barandun M. (DGUF), Kenzhebaev R. (CAIAG), Esenamanov M. (CAIAG), Saks T. (DGUF), Usubaliev R. (CAIAG), Hoelzle M. (DGUF)
KG	GOLUBIN	753	FLO	20182408		20192408	1035	-1113	-78	3795	72	Azisov E. (CAIAG), Barandun M. (DGUF), Kenzhebaev R. (CAIAG), Esenamanov M. (CAIAG), Saks T. (DGUF), Usubaliev R. (CAIAG), Hoelzle M. (DGUF)
KG	KARA-BATKAK	813	STR	20170828	20180504	20180906	460	-1270	-810	4020	39	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	KARA-BATKAK	813	STR	20180906	20190416	20190924	670	-1210	-540	4010	40	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	SARY TOR (NO.356)	805	STR	20170904	20180518	20180911	330	-870	-540	4380	32	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	SARY TOR (NO.356)	805	STR	20180911	20190506	20190906	290	-1140	-850	>4760	0	Popovnin V. (MSU), Satylkanov R. (TshMRC), Ermenbayev B. (TshMRC)
KG	TURGEN-AKSUU	13057		20180814		20190803			-567	4056	50	Baikhadzhaev R. (KyrgyzHydromet), Ajikeev A. (KyrgyzHydromet), Belekov S. (KyrgyzHydromet), Brus D. (FMI)
KZ - Kazakhstan												
KZ	TS.TUYUKSUYSKIY	817	STR	20170923	20180525	20180909	558	-632	-75	3780	51	Kasatkin N. (IGNANKaz)
KZ	TS.TUYUKSUYSKIY	817	STR	20180910	20190608	20190905	536	-1116	-580	3900	32	Kasatkin N. (IGNANKaz)
NO - Norway												
NO	AALFOTBREEN	317	COM	20171019	20180515	20181011	2843	-4879	-2036	>1368	0	Kjøllmoen B. (NVE)
NO	AALFOTBREEN	317	COM	20181011	20190520	20190925	2384	-4823	-2440	>1368	0	Kjøllmoen B. (NVE)
NO	AUSTDALSBREEN	321	COM	20171018	20180507	20181026	1910	-3441	-1531	>1747	0	Elvehøy H. (NVE)
NO	AUSTDALSBREEN	321	COM	20181026	20190430	20190925	1594	-2803	-1208	>1740	0	Elvehøy H. (NVE)

PU	GLACIER_NAME	WGMS_ID	SYS	BEGIN	END_WINTER	END	BW	BS	BA	ELA	AAR	INVESTIGATORS_(SPONS_AGENCY)
NO	ENGABREEN	298	COM	20171121	20180515	20181026	1747	-3376	-1629	>1544	0	Elvehøy H. (NVE)
NO	ENGABREEN	298	COM	20181026	20190521	20190927	3447	-2659	788	1094	76	Elvehøy H. (NVE)
NO	GRAASUBREEN	299	COM	20170928	20180604	20181016	388	-2207	-1819	>2283	0	Andreassen L. (NVE)
NO	GRAASUBREEN	299	COM	20181016	20190611	20190923	273	-1963	-1690	>2277	0	Andreassen L. (NVE)
NO	HANSEBREEN	322	COM	20171019	20180515	20181011	2647	-5298	-2651	>1310	0	Kjøllmoen B. (NVE)
NO	HANSEBREEN	322	COM	20181011	20190520	20190925	2037	-5051	-3014	>1310	0	Kjøllmoen B. (NVE)
NO	HELLSTUGUBREEN	300	COM	20170919	20180523	20181016	898	-2528	-1630	2100	4	Andreassen L. (NVE)
NO	HELLSTUGUBREEN	300	COM	20181016	20190430	20190923	596	-2469	-1873	>2213	0	Andreassen L. (NVE)
NO	LANGFJORDJOEKELEN	323	COM	20170929	20180510	20181012	1538	-3668	-2129	>1043	0	Kjøllmoen B. (NVE)
NO	LANGFJORDJOEKELEN	323	COM	20181012	20190523	20190927	2507	-2890	-383			Kjøllmoen B. (NVE)
NO	NIGARDSBREEN	290	COM	20171018	20180515	20181026	2367	-3219	-852	1675	36	Kjøllmoen B. (NVE)
NO	NIGARDSBREEN	290	COM	20181026	20190516	20190925	2042	-2308	-266	1580	62	Kjøllmoen B. (NVE)
NO	REMBESDALSKAAKA	2296	COM	20171018	20180524	20181122	1938	-3217	-1279	>1854	0	Elvehøy H. (NVE)
NO	REMBESDALSKAAKA	2296	COM	20181122	20190515	20191105	1749	-2522	-771	1755	40	Elvehøy H. (NVE)
NO	STORBREEN	302	COM	20170927	20180507	20181016	1273	-3242	-1969	2005	3	Andreassen L. (NVE)
NO	STORBREEN	302	COM	20181016	20190805	20190923	1018	-2537	-1519	2005	3	Andreassen L. (NVE)
NP - Nepal												
NP	MERA	3996	FXD	20171108		20181121			-920	5796	28	Wagnon P. (UG/IRD)
NP	MERA	3996	FXD	20181121		20191112			-800	5782	29	Wagnon P. (UG/IRD)
NP	POKALDE	3997	FXD	20171119		20181107			-1290	5655	0	Wagnon P. (UG/IRD)
NP	POKALDE	3997	FXD	20181107		20191123			-1120	5718	0	Wagnon P. (UG/IRD)
NP	RIKHA SAMBA	1516	FLO	20171010		20181001			-345	5749	70	Gurung T. (ICIMOD), Joshi S. (ICIMOD)
NP	RIKHA SAMBA	1516	FLO	20181001		20190928			-351	5842	44	Gurung T. (ICIMOD), Joshi S. (ICIMOD), Stumm D. (private)
NP	WEST CHANGRI NUP	10401	FXD	20171121		20181109			-2100	5616	3	Wagnon P. (UG/IRD)
NP	WEST CHANGRI NUP	10401	FXD	20181109		20191126			-1690	5585	15	Wagnon P. (UG/IRD)
NP	YALA	912	FLO	20171121		20181128			-1542	5487	18	Joshi S. (ICIMOD), Gurung T. (ICIMOD), Stumm D. (ICIMOD)
NP	YALA	912	FLO	20181128		20191120			-1285	5509	20	Joshi S. (ICIMOD), Gurung T. (ICIMOD), Stumm D. (private)
NZ - New Zealand												
NZ	BREWSTER	1597	FLO	20170315	20171110	20180323	2323	-4520	-2217	2122	13	Anderson B. (ARC), Cullen N. (DGUO-NZ), Sirguey P. (DGUO-NZ)
NZ	BREWSTER	1597	FLO	20180323	20181113	20190323	2657	-3990	-1333	2033	20	Anderson B. (ARC), Cullen N. (DGUO-NZ), Sirguey P. (DGUO-NZ)
NZ	ROLLESTON	1538	FLO	20170319	20171203	20180314	2474	-4238	-1761	1834	25	Kerr T. (private), Purdie H. (UCant/DG)
NZ	ROLLESTON	1538	FLO	20180314	20181207	20190323	2410	-4376	-1964	1902	1	Kerr T. (private), Purdie H. (UCant/DG)
PE - Peru												
PE	ARTESONRAJU	3292		2017		2018			-792	4990		Cochachin Rapre A. (AEGL/ANA)
PE	ARTESONRAJU	3292		2018		2019			-1285	5062		Cochachin Rapre A. (AEGL/ANA)
PE	YANAMAREY	226		2017		2018			-360	4949		Cochachin Rapre A. (AEGL/ANA)
PE	YANAMAREY	226		2018		2019			-895	4967		Cochachin Rapre A. (AEGL/ANA)
RU - Russia												
RU	DJANKUAT	726	STR	20171099	20180599	20181099	3980	-3540	440			Popovnin V. (MSU), Popovnin V. (RFBR)
RU	DJANKUAT	726	STR	20181099	20190599	20190921	3040	-3160	-120			Popovnin V. (MSU), Popovnin V. (RFBR), Gubanov A. (MSU), Gubanov A. (RFBR)
RU	GARABASHI	761	STR	20170914	20180525	20180914	1271	-2159	-888	3990		Rototayeva O. (IGRAN), Nosenko G. (IGRAN), Kutuzov S. (IGRAN), Lavrentiev I. (IGRAN), Nikitin S. (IGRAN), Smirnov A. (IGRAN)
RU	GARABASHI	761	COM	20180914	20190527	20190911	1059	-1893	-834	4130	32	Kutuzov S. (RAS/IG), Smirnov A. (RAS/IG), Nosenko G. (RAS/IG), Rototayeva O. (RAS/IG), Lavrentiev I. (RAS/IG), Nikitin S. (RAS/IG)
RU	LEVIY AKTRU	794	COM	20180999	20190511	20190824	561	-986	-425	3250	63	Kutuzov S. (RAS/IG), Erofeev A. (TSU/DG), Smirnov A. (RAS/IG)
SE - Sweden												
SE	MARMAGLACIAEREN	1461	COM	20170999	20180428	20180909	690	-2060	-1370	1663	7	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	MARMAGLACIAEREN	1461	COM	20180999	20190415	20190907	950	-1860	-910	1626	14	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	RABOTS GLACIAER	334	COM	20170999	20180528	20180913	720	-2310	-1590	1574	4	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	RABOTS GLACIAER	334	COM	20180999	20160416	20190914	1160	-1820	-650	1468	24	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	RIUKOJIETNA	342	COM	20170999	20180427	20180908	630	-2030	-1400	>1430	0	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	RIUKOJIETNA	342	COM	20180999	20190410	20190908	1510	-2110	-610	>1430	0	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	STORGLACIAEREN	332	COM	20170999	20180523	20180913	1090	-2690	-1600	1569	19	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SE	STORGLACIAEREN	332	COM	20180999	20190427	20190917	1590	-1900	-310	1501	42	Helanow C. (SU/NG), Eriksson P. (SU/NG), Tarfala Research Station (SITES)
SJ - Svalbard (Norway)												
SJ	AUSTRE BROEGGERBREEN	292		2017		2018			-880	525	1	Kohler J. (NPI)
SJ	AUSTRE BROEGGERBREEN	292		2018		2019			-710	459	5	Kohler J. (NPI)
SJ	AUSTRE LOVENBREEN	3812	COM	2017		2018	465	-1275	-810			Bernard E. (CNRS TheMA), Griselin M. (CNRS TheMA), Tolle F. (CNRS TheMA), Friedt J. (CNRS TheMA)
SJ	GROENFJORD E	3947	FLO	20170910		20180824			-1407	>557	0	Elagina N. (RAS/IG), Chernov R. (RAS/IG)
SJ	GROENFJORD E	3947	FLO	20180824	20190408	20190911	528	-2042	-1514	>557	0	Elagina N. (RAS/IG), Chernov R. (RAS/IG)
SJ	HANSBREEN	306	STR	20171103	20180501	20180924	900	-1531	-631		25	Luks B. (PAS)
SJ	HANSBREEN	306	STR	20180924	20190415	20191005	969	-1452	-483		39	Luks B. (PAS)
SJ	IRENEBREEN	2669		2017		2018			-1498	652	0	Sobota I. (PRC/FESSM)
SJ	IRENEBREEN	2669		2018		2019			-1186	652	0	Sobota I. (PRC/FESSM)
SJ	KONGSVEGEN	1456		2017		2018	420	-630	-210	574	34	Kohler J. (NPI)
SJ	KONGSVEGEN	1456		2018		2019	570	-1040	-470	703	5	Kohler J. (NPI)
SJ	KRONEBREEN	3504		2017		2018			-10	695	38	Kohler J. (NPI)
SJ	MIDTRE LOVENBREEN	291		2017		2018			-770	506	2	Kohler J. (NPI)
SJ	MIDTRE LOVENBREEN	291		2018		2019			-560	426	12	Kohler J. (NPI)
SJ	NORDENSKIOELDBREEN	3479		2017		2018	416	-721	-305	784	36	Van Pelt W. (DES/UU)
SJ	NORDENSKIOELDBREEN	3479		2018		2019	534	-641	-107	684	48	Van Pelt W. (DES/UU)
SJ	SVENBREEN	8380		2017		2018999			-830			Malecki J. (ADU)
SJ	WALDEMARBREEN	2307		2017		2018			-1743	579	0	Sobota I. (PRC/FESSM)
SJ	WALDEMARBREEN	2307		2018		2019			-1061	489	0	Sobota I. (PRC/FESSM)
SJ	WERENSKIOLDBREEN	305	FXD	20180421	20181025	20190409	706	-1456	-750	475	18	Ignatiuk D. (US/IES), Laska M. (US/IES)
TJ - Tajikistan												
TJ	EAST ZULMART (GLACIER NO 139)	13493	FXD	20180905		20190910			-262	5350	48	Kayumov A. (CRG)

PU	GLACIER_NAME	WGMS_ID	SYS	BEGIN	END WINTER	END	BW	BS	BA	ELA	AAR	INVESTIGATORS_(SPONS_AGENCY)
US - United States of America												
US	COLUMBIA (2057)	76	FXD	20170920	20180425	20181005			-630	1660	30	Pelto M. (NCGCP)
US	COLUMBIA (2057)	76	FXD	20181005	20190419	20191006			-1870	1730	14	Pelto M. (NCGCP)
US	DANIELS	83	FXD	20170922	20180425	20180928			-680		50	Pelto M. (NCGCP)
US	DANIELS	83	FXD	20180928	20190419	20191005			-1650		16	Pelto M. (NCGCP)
US	EASTON	1367	FXD	20170921	20180425	20181005			-500	2125	49	Pelto M. (NCGCP)
US	EASTON	1367	FXD	20181005	20190419	20190928			-1700	2300	38	Pelto M. (NCGCP)
US	GULKANA	90	FLO	20170909	20180529	20180920	940	-1320	-380	1810		O'Neel S. (USGS-F), McNeil C. (USGS-F), Sass L. (USGS-F)
US	GULKANA	90	FLO	20180920	20190512	20190915	860	-2320	-1460	1977		Florentine C. (USGS-F), Sass L. (USGS-F)
US	ICE WORM	82	FXD	20170922	20180425	20180928			-750		44	Pelto M. (NCGCP)
US	ICE WORM	82	FXD	20180928	20190419	20191005			-2050		5	Pelto M. (NCGCP)
US	LEMON CREEK	3334	FLO	20171007	20180504	20181025	1990	-4510	-2520	1717	0	Pelto M. (JIRP), McNeil C. (JIRP)
US	LEMON CREEK	3334	FLO	20181025	20190507	20191005	1960	-5120	-3160	2034		Florentine C. (USGS-F), Sass L. (USGS-F)
US	LOWER CURTIS	77	FXD	20170924	20180425	20180928			-820	1850	41	Pelto M. (NCGCP)
US	LOWER CURTIS	77	FXD	20180928	20190419	20190928			-1440	1675	20	Pelto M. (NCGCP)
US	LYNCH	81	FXD	20170920	20180425	20180928			-640		43	Pelto M. (NCGCP)
US	LYNCH	81	FXD	20180928	20190419	20191005			-1700		22	Pelto M. (NCGCP)
US	RAINBOW	79	FXD	20170923	20180425	20180929			-530	1825	56	Pelto M. (NCGCP)
US	RAINBOW	79	FXD	20180929	20190419	20190929			-1180	1950	32	Pelto M. (NCGCP)
US	SHOLES	3295	FXD	20170921	20180425	20180929			-820		46	Pelto M. (NCGCP)
US	SHOLES	3295	FXD	20180929	20190419	20190928			-1970		18	Pelto M. (NCGCP)
US	SOUTH CASCADE	205	FLO	20171006	20180422	20180929	3800	-4480	-680	2040		Whorton E. (USGS-T), McNeil C. (USGS-F)
US	SOUTH CASCADE	205	FLO	20180929	20190420	20190927	2440	-4490	-2050	>3264		Florentine C. (USGS-F), Sass L. (USGS-F)
US	SPERRY	218	FLO	20170930	20180423	20180927	4020	-3930	90	2494		Fagre D. (USGS-GNP), Clark A. (USGS-GNP)
US	SPERRY	218	FLO	20180927	20190502	20190925	2040	-4040	-2000	2557		Florentine C. (USGS-F), Sass L. (USGS-F)
US	TAKU	124	FLO	20171001	20180505	20181004	1700	-3060	-1360	1307	49	Pelto M. (JIRP), McNeil C. (JIRP)
US	TAKU	124	FLO	20181004	20190507	20191005	1460	-3730	-2270	1527		McNeil C. (USGS-F)
US	WOLVERINE	94	FLO	20170930	20180524	20181002	1620	-3480	-1860	1366		O'Neel S. (USGS-F), Sass L. (USGS-F)
US	WOLVERINE	94	FLO	20181002	20190511	20191010	2570	-4100	-1530	1266		Florentine C. (USGS-F), Sass L. (USGS-F)
US	YAWNING	75	FXD	20170924	20180425	20181004			-480		50	Pelto M. (NCGCP)
US	YAWNING	75	FXD	20181004	20190419	20191004			-1760		20	Pelto M. (NCGCP)

APPENDIX - Table 4

MASS BALANCE VERSUS ELEVATION DATA 2018–2019

PU	Political unit, alphabetic 2-digit country code (cf. www.iso.org)
GLACIER NAME	Name of the glacier in capital letters, cf. Appendix Table 1
WGMS ID	Key identifier of the glacier, cf. Appendix Table 1
YEAR	Balance year
ELEV FROM	Lower boundary of elevation interval in metres above sea level
ELEV TO	Upper boundary of elevation interval in metres above sea level
AREA	Area of elevation interval in square kilometres
BW	Specific winter balance of elevation interval in mm water equivalent
BS	Specific summer balance of elevation interval in mm water equivalent
BA	Specific annual balance of elevation interval in mm water equivalent

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
AQ - Antarctica									
AQ	BAHIA DEL DIABLO	2665	2018	562	630	1.79			500
AQ	BAHIA DEL DIABLO	2665	2018	488	562	2.8			550
AQ	BAHIA DEL DIABLO	2665	2018	412	488	2.06			430
AQ	BAHIA DEL DIABLO	2665	2018	338	412	1.29			70
AQ	BAHIA DEL DIABLO	2665	2018	262	338	0.63			-230
AQ	BAHIA DEL DIABLO	2665	2018	188	262	1.92			-520
AQ	BAHIA DEL DIABLO	2665	2018	112	188	2.16			-1670
AQ	BAHIA DEL DIABLO	2665	2018	38	112	0.25			-760
AQ	BAHIA DEL DIABLO	2665	2019	562	630	1.79			365
AQ	BAHIA DEL DIABLO	2665	2019	488	562	2.8			920
AQ	BAHIA DEL DIABLO	2665	2019	412	488	2.06			400
AQ	BAHIA DEL DIABLO	2665	2019	338	412	1.29			170
AQ	BAHIA DEL DIABLO	2665	2019	262	338	0.63			0
AQ	BAHIA DEL DIABLO	2665	2019	188	262	1.92			-590
AQ	BAHIA DEL DIABLO	2665	2019	112	188	2.16			-885
AQ	BAHIA DEL DIABLO	2665	2019	38	112	0.25			-650
AR - Argentina									
AR	AGUA NEGRA	4532	2018	5200	5250	0.025	594	112	705
AR	AGUA NEGRA	4532	2018	5150	5200	0.126	567	-88	479
AR	AGUA NEGRA	4532	2018	5100	5150	0.14	368	-145	222
AR	AGUA NEGRA	4532	2018	5050	5100	0.131	421	-905	-484
AR	AGUA NEGRA	4532	2018	5000	5050	0.138	320	-1374	-1054
AR	AGUA NEGRA	4532	2018	4950	5000	0.142	252	-2134	-1882
AR	AGUA NEGRA	4532	2018	4900	4950	0.136	294	-2063	-1769
AR	AGUA NEGRA	4532	2018	4850	4900	0.097	285	-2035	-1750
AR	AGUA NEGRA	4532	2018	4800	4850	0.061	283	-1858	-1575
AR	AGUA NEGRA	4532	2018	4750	4800	0.026	250	-1028	-778
AR	AGUA NEGRA	4532	2019	5200	5250	0.025	362	888	1250
AR	AGUA NEGRA	4532	2019	5150	5200	0.126	602	625	1227
AR	AGUA NEGRA	4532	2019	5100	5150	0.14	700	107	807
AR	AGUA NEGRA	4532	2019	5050	5100	0.131	885	-374	511
AR	AGUA NEGRA	4532	2019	5000	5050	0.138	812	-1040	-228
AR	AGUA NEGRA	4532	2019	4950	5000	0.142	641	-993	-352
AR	AGUA NEGRA	4532	2019	4900	4950	0.136	542	-1586	-1044
AR	AGUA NEGRA	4532	2019	4850	4900	0.097	604	-2556	-1952
AR	AGUA NEGRA	4532	2019	4800	4850	0.061	475	-1842	-1366
AR	AGUA NEGRA	4532	2019	4750	4800	0.026	324	-1574	-1250
AR	DE LOS TRES	1675	2018	1950	2000	0.0007	2750	-2000	750
AR	DE LOS TRES	1675	2018	1900	1950	0.0033	2750	-2000	750
AR	DE LOS TRES	1675	2018	1850	1900	0.006	2750	-2000	750
AR	DE LOS TRES	1675	2018	1800	1850	0.0131	2750	-2000	750
AR	DE LOS TRES	1675	2018	1750	1800	0.0245	2750	-2040	710
AR	DE LOS TRES	1675	2018	1700	1750	0.032	2744	-2295	449
AR	DE LOS TRES	1675	2018	1650	1700	0.0359	2409	-2158	251
AR	DE LOS TRES	1675	2018	1600	1650	0.0522	2223	-2120	103
AR	DE LOS TRES	1675	2018	1550	1600	0.1106	2191	-2226	-35
AR	DE LOS TRES	1675	2018	1500	1550	0.1031	2078	-2528	-449
AR	DE LOS TRES	1675	2018	1450	1500	0.0969	1904	-2800	-896
AR	DE LOS TRES	1675	2018	1400	1450	0.1138	1603	-2973	-1370
AR	DE LOS TRES	1675	2018	1350	1400	0.0931	1272	-3195	-1923
AR	DE LOS TRES	1675	2018	1300	1350	0.052	991	-3351	-2360
AR	DE LOS TRES	1675	2018	1250	1300	0.044	1004	-3785	-2782
AR	DE LOS TRES	1675	2018	1200	1250	0.0221	1320	-4523	-3203
AR	MARTIAL ESTE	2000	2018	1160	1180	0.0023	1020	-880	140
AR	MARTIAL ESTE	2000	2018	1140	1160	0.0051	1060	-890	170
AR	MARTIAL ESTE	2000	2018	1120	1140	0.0074	1095	-895	200
AR	MARTIAL ESTE	2000	2018	1100	1120	0.0114	1180	-875	305
AR	MARTIAL ESTE	2000	2018	1080	1100	0.0151	1240	-810	430
AR	MARTIAL ESTE	2000	2018	1060	1080	0.0163	930	-1065	-135
AR	MARTIAL ESTE	2000	2018	1040	1060	0.0128	780	-1325	-545
AR	MARTIAL ESTE	2000	2018	1020	1040	0.0127	650	-1520	-870
AR	MARTIAL ESTE	2000	2018	1000	1020	0.0081	530	-1725	-1195
AR	MARTIAL ESTE	2000	2018	980	1000	0.0021	480	-1995	-1515
AR	MARTIAL ESTE	2000	2018	960	980	0.0004	430	-2280	-1850
AR	MARTIAL ESTE	2000	2019	1160	1180	0.0023	1060	-910	150
AR	MARTIAL ESTE	2000	2019	1140	1160	0.0051	1080	-860	220
AR	MARTIAL ESTE	2000	2019	1120	1140	0.0074	1100	-810	290
AR	MARTIAL ESTE	2000	2019	1100	1120	0.0114	1120	-760	360
AR	MARTIAL ESTE	2000	2019	1080	1100	0.0151	960	-960	0
AR	MARTIAL ESTE	2000	2019	1060	1080	0.0163	780	-1160	-380
AR	MARTIAL ESTE	2000	2019	1040	1060	0.0128	650	-1365	-715
AR	MARTIAL ESTE	2000	2019	1020	1040	0.0127	550	-1950	-1400
AR	MARTIAL ESTE	2000	2019	1000	1020	0.0081	485	-2445	-1960
AR	MARTIAL ESTE	2000	2019	980	1000	0.0021	460	-2490	-2030
AR	MARTIAL ESTE	2000	2019	960	980	0.0004	425	-2525	-2100
AT - Austria									
AT	GOLDBERG K.	1305	2018	3050	3100	0.0056	1713	-2540	-827
AT	GOLDBERG K.	1305	2018	3000	3050	0.0405	1927	-2758	-831
AT	GOLDBERG K.	1305	2018	2950	3000	0.0811	2067	-2731	-664
AT	GOLDBERG K.	1305	2018	2900	2950	0.0911	1904	-3150	-1246
AT	GOLDBERG K.	1305	2018	2850	2900	0.0401	1834	-4102	-2268
AT	GOLDBERG K.	1305	2018	2800	2850	0.0045	2042	-4922	-2880
AT	GOLDBERG K.	1305	2018	2750	2800	0.0027	2836	-3190	-354
AT	GOLDBERG K.	1305	2018	2700	2750	0.0719	2672	-3271	-599
AT	GOLDBERG K.	1305	2018	2650	2700	0.288	2232	-3693	-1461
AT	GOLDBERG K.	1305	2018	2600	2650	0.2641	1885	-4287	-2402
AT	GOLDBERG K.	1305	2018	2550	2600	0.026	2008	-4666	-2658
AT	GOLDBERG K.	1305	2018	2500	2550	0.0015	2117	-4842	-2725
AT	GOLDBERG K.	1305	2018	2450	2500	0.0227	1735	-2959	-1224
AT	GOLDBERG K.	1305	2018	2400	2450	0.0768	2082	-4593	-2511
AT	GOLDBERG K.	1305	2018	2350	2400	0.0144	1831	-5123	-3292
AT	GOLDBERG K.	1305	2019	3050	3100	0.0035	2256	-2063	193
AT	GOLDBERG K.	1305	2019	3000	3050	0.0366	2070	-2168	-98

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
AT	GOLDBERG K.	1305	2019	2950	3000	0.0795	1923	-2146	-223
AT	GOLDBERG K.	1305	2019	2900	2950	0.0884	1883	-2443	-560
AT	GOLDBERG K.	1305	2019	2850	2900	0.0351	1775	-3149	-1374
AT	GOLDBERG K.	1305	2019	2800	2850	0.003	1970	-3771	-1801
AT	GOLDBERG K.	1305	2019	2750	2800	0.0027	2144	-1780	364
AT	GOLDBERG K.	1305	2019	2700	2750	0.0723	2186	-2077	109
AT	GOLDBERG K.	1305	2019	2650	2700	0.3014	2002	-2801	-799
AT	GOLDBERG K.	1305	2019	2600	2650	0.227	1821	-3100	-1279
AT	GOLDBERG K.	1305	2019	2550	2600	0.0195	1661	-3243	-1582
AT	GOLDBERG K.	1305	2019	2500	2550	0.0004	1564	-3053	-1489
AT	GOLDBERG K.	1305	2019	2450	2500	0.0218	1921	-2668	-747
AT	GOLDBERG K.	1305	2019	2400	2450	0.0648	1498	-3219	-1721
AT	GOLDBERG K.	1305	2019	2350	2400	0.0031	1395	-2908	-1513
AT	HALLSTAETTER G.	535	2018	2850	2900	0.01	2607	-2479	128
AT	HALLSTAETTER G.	535	2018	2800	2850	0.027	2600	-2475	125
AT	HALLSTAETTER G.	535	2018	2750	2800	0.036	2533	-2778	-245
AT	HALLSTAETTER G.	535	2018	2700	2750	0.166	2565	-2952	-387
AT	HALLSTAETTER G.	535	2018	2650	2700	0.315	2518	-3348	-830
AT	HALLSTAETTER G.	535	2018	2600	2650	0.564	2578	-3577	-999
AT	HALLSTAETTER G.	535	2018	2550	2600	0.491	2418	-4387	-1969
AT	HALLSTAETTER G.	535	2018	2500	2550	0.372	2349	-4258	-1909
AT	HALLSTAETTER G.	535	2018	2450	2500	0.361	2266	-4475	-2209
AT	HALLSTAETTER G.	535	2018	2400	2450	0.218	1868	-5196	-3328
AT	HALLSTAETTER G.	535	2018	2350	2400	0.168	1657	-5739	-4082
AT	HALLSTAETTER G.	535	2018	2300	2350	0.079	1510	-5900	-4390
AT	HALLSTAETTER G.	535	2018	2250	2300	0.026	1202	-5951	-4749
AT	HALLSTAETTER G.	535	2018	2200	2250	0	1200	-5950	-4750
AT	HALLSTAETTER G.	535	2019	2850	2900	0.007	2900	-2025	875
AT	HALLSTAETTER G.	535	2019	2800	2850	0.026	2900	-2031	869
AT	HALLSTAETTER G.	535	2019	2750	2800	0.031	2781	-2446	335
AT	HALLSTAETTER G.	535	2019	2700	2750	0.136	2652	-2117	535
AT	HALLSTAETTER G.	535	2019	2650	2700	0.265	2734	-2239	495
AT	HALLSTAETTER G.	535	2019	2600	2650	0.463	2835	-2431	404
AT	HALLSTAETTER G.	535	2019	2550	2600	0.537	2556	-2603	-47
AT	HALLSTAETTER G.	535	2019	2500	2550	0.358	2368	-3142	-774
AT	HALLSTAETTER G.	535	2019	2450	2500	0.337	2180	-3435	-1255
AT	HALLSTAETTER G.	535	2019	2400	2450	0.225	2008	-4055	-2047
AT	HALLSTAETTER G.	535	2019	2350	2400	0.148	1852	-4715	-2863
AT	HALLSTAETTER G.	535	2019	2300	2350	0.074	1887	-4765	-2878
AT	HALLSTAETTER G.	535	2019	2250	2300	0.025	1645	-4039	-2394
AT	HALLSTAETTER G.	535	2019	2200	2250	0.003	1700	-3950	-2250
AT	HINTEREIS F.	491	2018	3700	3750	0.002	700	-694	6
AT	HINTEREIS F.	491	2018	3650	3700	0.02	741	-700	41
AT	HINTEREIS F.	491	2018	3600	3650	0.026	800	-749	51
AT	HINTEREIS F.	491	2018	3550	3600	0.019	864	-779	85
AT	HINTEREIS F.	491	2018	3500	3550	0.015	821	-779	42
AT	HINTEREIS F.	491	2018	3450	3500	0.061	970	-1042	-73
AT	HINTEREIS F.	491	2018	3400	3450	0.118	1051	-1250	-198
AT	HINTEREIS F.	491	2018	3350	3400	0.236	1189	-1407	-218
AT	HINTEREIS F.	491	2018	3300	3350	0.395	1362	-2010	-649
AT	HINTEREIS F.	491	2018	3250	3300	0.411	1461	-2459	-998
AT	HINTEREIS F.	491	2018	3200	3250	0.427	1462	-2762	-1300
AT	HINTEREIS F.	491	2018	3150	3200	0.537	1413	-2878	-1465
AT	HINTEREIS F.	491	2018	3100	3150	0.605	1290	-2688	-1398
AT	HINTEREIS F.	491	2018	3050	3100	0.626	1260	-2928	-1668
AT	HINTEREIS F.	491	2018	3000	3050	0.507	1290	-3121	-1831
AT	HINTEREIS F.	491	2018	2950	3000	0.396	1265	-2975	-1709
AT	HINTEREIS F.	491	2018	2900	2950	0.41	1181	-3217	-2036
AT	HINTEREIS F.	491	2018	2850	2900	0.346	1101	-3562	-2461
AT	HINTEREIS F.	491	2018	2800	2850	0.286	1081	-3974	-2893
AT	HINTEREIS F.	491	2018	2750	2800	0.239	1010	-5061	-4052
AT	HINTEREIS F.	491	2018	2700	2750	0.293	922	-5079	-4158
AT	HINTEREIS F.	491	2018	2650	2700	0.176	686	-5467	-4780
AT	HINTEREIS F.	491	2018	2600	2650	0.125	556	-5814	-5258
AT	HINTEREIS F.	491	2018	2550	2600	0.091	502	-6795	-6294
AT	HINTEREIS F.	491	2018	2500	2550	0.021	791	-9707	-8916
AT	HINTEREIS F.	491	2019	3700	3750	0.002	1625	-1500	125
AT	HINTEREIS F.	491	2019	3650	3700	0.02	1625	-1500	125
AT	HINTEREIS F.	491	2019	3600	3650	0.026	1590	-1465	125
AT	HINTEREIS F.	491	2019	3550	3600	0.019	1518	-1388	131
AT	HINTEREIS F.	491	2019	3500	3550	0.015	1541	-1462	80
AT	HINTEREIS F.	491	2019	3450	3500	0.055	1641	-1635	6
AT	HINTEREIS F.	491	2019	3400	3450	0.111	1706	-1639	67
AT	HINTEREIS F.	491	2019	3350	3400	0.221	1837	-1648	190
AT	HINTEREIS F.	491	2019	3300	3350	0.383	1912	-1600	312
AT	HINTEREIS F.	491	2019	3250	3300	0.371	1909	-1743	167
AT	HINTEREIS F.	491	2019	3200	3250	0.372	1834	-1806	27
AT	HINTEREIS F.	491	2019	3150	3200	0.482	1765	-1847	-82
AT	HINTEREIS F.	491	2019	3100	3150	0.585	1747	-1751	-3
AT	HINTEREIS F.	491	2019	3050	3100	0.618	1708	-1935	-226
AT	HINTEREIS F.	491	2019	3000	3050	0.502	1698	-2063	-365
AT	HINTEREIS F.	491	2019	2950	3000	0.406	1597	-2243	-646
AT	HINTEREIS F.	491	2019	2900	2950	0.411	1511	-2484	-974
AT	HINTEREIS F.	491	2019	2850	2900	0.337	1517	-2500	-984
AT	HINTEREIS F.	491	2019	2800	2850	0.29	1571	-3056	-1485
AT	HINTEREIS F.	491	2019	2750	2800	0.2	1502	-3360	-1858
AT	HINTEREIS F.	491	2019	2700	2750	0.286	1394	-3621	-2228
AT	HINTEREIS F.	491	2019	2650	2700	0.19	1364	-4090	-2726
AT	HINTEREIS F.	491	2019	2600	2650	0.153	1226	-4645	-3419
AT	HINTEREIS F.	491	2019	2550	2600	0.108	971	-4614	-3643
AT	HINTEREIS F.	491	2019	2500	2550	0.046	1046	-5227	-4182
AT	HINTEREIS F.	491	2019	2450	2500	0.014	1125	-5250	-4125
AT	JAMTAL F.	480	2018	3100	3150	0.013	1535	-2788	-1253
AT	JAMTAL F.	480	2018	3050	3100	0.074	1535	-3015	-1480
AT	JAMTAL F.	480	2018	3000	3050	0.13	1198	-2562	-1364
AT	JAMTAL F.	480	2018	2950	3000	0.302	1605	-3125	-1520

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
AT	JAMTAL F.	480	2018	2900	2950	0.325	1458	-3120	-1662
AT	JAMTAL F.	480	2018	2850	2900	0.314	1397	-3276	-1879
AT	JAMTAL F.	480	2018	2800	2850	0.277	1368	-3598	-2230
AT	JAMTAL F.	480	2018	2750	2800	0.301	1565	-4200	-2635
AT	JAMTAL F.	480	2018	2700	2750	0.332	1517	-4213	-2696
AT	JAMTAL F.	480	2018	2650	2700	0.297	1184	-3833	-2649
AT	JAMTAL F.	480	2018	2600	2650	0.152	1566	-4395	-2829
AT	JAMTAL F.	480	2018	2550	2600	0.146	1477	-5123	-3646
AT	JAMTAL F.	480	2018	2500	2550	0.106	1338	-4681	-3343
AT	JAMTAL F.	480	2018	2450	2500	0.02	1294	-3625	-2331
AT	JAMTAL F.	480	2019	3100	3150	0.013	1406	-1487	-81
AT	JAMTAL F.	480	2019	3050	3100	0.074	1406	-1612	-206
AT	JAMTAL F.	480	2019	3000	3050	0.13	1381	-1759	-378
AT	JAMTAL F.	480	2019	2950	3000	0.301	1409	-1770	-361
AT	JAMTAL F.	480	2019	2900	2950	0.323	1582	-2097	-515
AT	JAMTAL F.	480	2019	2850	2900	0.281	1540	-2374	-834
AT	JAMTAL F.	480	2019	2800	2850	0.274	1501	-2511	-1010
AT	JAMTAL F.	480	2019	2750	2800	0.3	1574	-2955	-1381
AT	JAMTAL F.	480	2019	2700	2750	0.33	1781	-3305	-1524
AT	JAMTAL F.	480	2019	2650	2700	0.279	1670	-3519	-1849
AT	JAMTAL F.	480	2019	2600	2650	0.138	1710	-4098	-2388
AT	JAMTAL F.	480	2019	2550	2600	0.14	1575	-4320	-2745
AT	JAMTAL F.	480	2019	2500	2550	0.102	1277	-4167	-2890
AT	JAMTAL F.	480	2019	2450	2500	0.019	1253	-3900	-2647
AT	KESSELWAND F.	507	2018	3450	3500	0.018			0
AT	KESSELWAND F.	507	2018	3400	3450	0.032			67
AT	KESSELWAND F.	507	2018	3350	3400	0.032			-111
AT	KESSELWAND F.	507	2018	3300	3350	0.185			-506
AT	KESSELWAND F.	507	2018	3250	3300	0.591			-352
AT	KESSELWAND F.	507	2018	3200	3250	0.801			-1460
AT	KESSELWAND F.	507	2018	3150	3200	0.719			-1798
AT	KESSELWAND F.	507	2018	3100	3150	0.507			-2028
AT	KESSELWAND F.	507	2018	3050	3100	0.424			-2493
AT	KESSELWAND F.	507	2018	3000	3050	0.171			-3178
AT	KESSELWAND F.	507	2018	2950	3000	0.073			-3497
AT	KESSELWAND F.	507	2018	2900	2950	0.049			-3500
AT	KESSELWAND F.	507	2018	2850	2900	0.006			-3500
AT	KESSELWAND F.	507	2019	3450	3500	0.014			125
AT	KESSELWAND F.	507	2019	3400	3450	0.031			38
AT	KESSELWAND F.	507	2019	3350	3400	0.027			60
AT	KESSELWAND F.	507	2019	3300	3350	0.159			253
AT	KESSELWAND F.	507	2019	3250	3300	0.58			373
AT	KESSELWAND F.	507	2019	3200	3250	0.775			12
AT	KESSELWAND F.	507	2019	3150	3200	0.731			-187
AT	KESSELWAND F.	507	2019	3100	3150	0.499			-550
AT	KESSELWAND F.	507	2019	3050	3100	0.432			-1150
AT	KESSELWAND F.	507	2019	3000	3050	0.185			-1735
AT	KESSELWAND F.	507	2019	2950	3000	0.071			-1943
AT	KESSELWAND F.	507	2019	2900	2950	0.045			-2116
AT	KESSELWAND F.	507	2019	2850	2900	0.002			-2125
AT	KLEINFLEISS K.	547	2018	3000	3050	0.0291	1626	-2645	-1019
AT	KLEINFLEISS K.	547	2018	2950	3000	0.0822	1739	-2877	-1138
AT	KLEINFLEISS K.	547	2018	2900	2950	0.1044	1853	-3014	-1161
AT	KLEINFLEISS K.	547	2018	2850	2900	0.1901	2031	-2774	-743
AT	KLEINFLEISS K.	547	2018	2800	2850	0.2409	1845	-3195	-1350
AT	KLEINFLEISS K.	547	2018	2750	2800	0.1189	1337	-3902	-2565
AT	KLEINFLEISS K.	547	2018	2700	2750	0.02	1144	-4439	-3295
AT	KLEINFLEISS K.	547	2019	3000	3050	0.0276	1886	-2394	-508
AT	KLEINFLEISS K.	547	2019	2950	3000	0.0838	1528	-2162	-634
AT	KLEINFLEISS K.	547	2019	2900	2950	0.098	1552	-2149	-597
AT	KLEINFLEISS K.	547	2019	2850	2900	0.1838	1919	-1903	16
AT	KLEINFLEISS K.	547	2019	2800	2850	0.2406	1784	-2514	-730
AT	KLEINFLEISS K.	547	2019	2750	2800	0.1131	1407	-3378	-1971
AT	KLEINFLEISS K.	547	2019	2700	2750	0.0097	1060	-3719	-2659
AT	PASTERZE	566	2018	3500	3600	0			-84
AT	PASTERZE	566	2018	3400	3500	0.139			82
AT	PASTERZE	566	2018	3300	3400	0.638			234
AT	PASTERZE	566	2018	3200	3300	1.476			182
AT	PASTERZE	566	2018	3100	3200	2.478			41
AT	PASTERZE	566	2018	3000	3100	3.072			-173
AT	PASTERZE	566	2018	2900	3000	2.272			-700
AT	PASTERZE	566	2018	2800	2900	1.384			-1902
AT	PASTERZE	566	2018	2700	2800	0.685			-2391
AT	PASTERZE	566	2018	2600	2700	0.385			-2963
AT	PASTERZE	566	2018	2500	2600	0.217			-4458
AT	PASTERZE	566	2018	2400	2500	0.196			-5203
AT	PASTERZE	566	2018	2300	2400	0.694			-5433
AT	PASTERZE	566	2018	2200	2300	1.007			-5494
AT	PASTERZE	566	2018	2100	2200	0.674			-5065
AT	PASTERZE	566	2018	2000	2100	0.019			-4045
AT	SEEKARLES F.	10459	2018	3250	3300	0	1500	-1375	125
AT	SEEKARLES F.	10459	2018	3200	3250	0.038	1425	-1683	-258
AT	SEEKARLES F.	10459	2018	3150	3200	0.173	1354	-2150	-796
AT	SEEKARLES F.	10459	2018	3100	3150	0.155	1230	-2307	-1077
AT	SEEKARLES F.	10459	2018	3050	3100	0.185	1209	-2196	-987
AT	SEEKARLES F.	10459	2018	3000	3050	0.1	1083	-2829	-1747
AT	SEEKARLES F.	10459	2018	2950	3000	0.092	1141	-2894	-1753
AT	SEEKARLES F.	10459	2018	2900	2950	0.104	1094	-3475	-2381
AT	SEEKARLES F.	10459	2018	2850	2900	0.114	1086	-3647	-2561
AT	SEEKARLES F.	10459	2018	2800	2850	0.052	935	-3807	-2872
AT	SEEKARLES F.	10459	2018	2750	2800	0.017	1047	-3022	-1976
AT	SEEKARLES F.	10459	2018	2700	2750	0.004	1272	-2690	-1418
AT	SEEKARLES F.	10459	2019	3250	3300	0	1500	-1375	125
AT	SEEKARLES F.	10459	2019	3200	3250	0.021	1509	-1384	125
AT	SEEKARLES F.	10459	2019	3150	3200	0.156	1484	-1559	-75
AT	SEEKARLES F.	10459	2019	3100	3150	0.156	1329	-1812	-483

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
AT	SEEKARLES F.	10459	2019	3050	3100	0.187	1284	-1712	-428
AT	SEEKARLES F.	10459	2019	3000	3050	0.107	1255	-2117	-862
AT	SEEKARLES F.	10459	2019	2950	3000	0.086	1213	-2175	-962
AT	SEEKARLES F.	10459	2019	2900	2950	0.094	1220	-2356	-1137
AT	SEEKARLES F.	10459	2019	2850	2900	0.103	1281	-3144	-1863
AT	SEEKARLES F.	10459	2019	2800	2850	0.089	1275	-3216	-1941
AT	SEEKARLES F.	10459	2019	2750	2800	0.03	1304	-2766	-1462
AT	SEEKARLES F.	10459	2019	2700	2750	0.005	1500	-2627	-1127
AT	VENEDIGER K.	10460	2018	3400	3450	0	1900	-775	1125
AT	VENEDIGER K.	10460	2018	3350	3400	0.018	1943	-758	1185
AT	VENEDIGER K.	10460	2018	3300	3350	0.065	1980	-753	1227
AT	VENEDIGER K.	10460	2018	3250	3300	0.061	1953	-831	1122
AT	VENEDIGER K.	10460	2018	3200	3250	0.08	1917	-830	1087
AT	VENEDIGER K.	10460	2018	3150	3200	0.16	1821	-968	853
AT	VENEDIGER K.	10460	2018	3100	3150	0.154	1700	-1232	468
AT	VENEDIGER K.	10460	2018	3050	3100	0.088	1618	-1330	288
AT	VENEDIGER K.	10460	2018	3000	3050	0.097	1500	-1403	97
AT	VENEDIGER K.	10460	2018	2950	3000	0.113	1500	-1548	-48
AT	VENEDIGER K.	10460	2018	2900	2950	0.172	1453	-1859	-406
AT	VENEDIGER K.	10460	2018	2850	2900	0.296	1354	-2353	-999
AT	VENEDIGER K.	10460	2018	2800	2850	0.146	1179	-2725	-1546
AT	VENEDIGER K.	10460	2018	2750	2800	0.128	1201	-3486	-2285
AT	VENEDIGER K.	10460	2018	2700	2750	0.111	1153	-3986	-2833
AT	VENEDIGER K.	10460	2018	2650	2700	0.045	1044	-4671	-3627
AT	VENEDIGER K.	10460	2018	2600	2650	0.048	837	-4936	-4099
AT	VENEDIGER K.	10460	2018	2550	2600	0.098	700	-5291	-4591
AT	VENEDIGER K.	10460	2018	2500	2550	0.087	643	-5560	-4917
AT	VENEDIGER K.	10460	2018	2450	2500	0.027	500	-5750	-5250
AT	VENEDIGER K.	10460	2018	2400	2450	0	500	-5750	-5250
AT	VENEDIGER K.	10460	2019	3350	3400	0.017	2334	-875	1459
AT	VENEDIGER K.	10460	2019	3300	3350	0.065	2334	-966	1368
AT	VENEDIGER K.	10460	2019	3250	3300	0.06	2300	-1178	1122
AT	VENEDIGER K.	10460	2019	3200	3250	0.076	2291	-966	1325
AT	VENEDIGER K.	10460	2019	3150	3200	0.154	2219	-1140	1079
AT	VENEDIGER K.	10460	2019	3100	3150	0.151	1956	-1176	780
AT	VENEDIGER K.	10460	2019	3050	3100	0.085	1894	-1343	551
AT	VENEDIGER K.	10460	2019	3000	3050	0.09	1719	-1274	445
AT	VENEDIGER K.	10460	2019	2950	3000	0.111	1700	-1350	350
AT	VENEDIGER K.	10460	2019	2900	2950	0.154	1700	-1512	188
AT	VENEDIGER K.	10460	2019	2850	2900	0.272	1700	-1896	-196
AT	VENEDIGER K.	10460	2019	2800	2850	0.136	1678	-3068	-1390
AT	VENEDIGER K.	10460	2019	2750	2800	0.123	1478	-3695	-2217
AT	VENEDIGER K.	10460	2019	2700	2750	0.095	1338	-4384	-3046
AT	VENEDIGER K.	10460	2019	2650	2700	0.041	1290	-4639	-3349
AT	VENEDIGER K.	10460	2019	2600	2650	0.045	1190	-4936	-3746
AT	VENEDIGER K.	10460	2019	2550	2600	0.085	1066	-4816	-3750
AT	VENEDIGER K.	10460	2019	2500	2550	0.06	882	-4719	-3837
AT	VERNAGT F.	489	2018	3550	3600	0.0031			-39
AT	VERNAGT F.	489	2018	3500	3550	0.0104			-16
AT	VERNAGT F.	489	2018	3450	3500	0.1375			75
AT	VERNAGT F.	489	2018	3400	3450	0.1574			-1
AT	VERNAGT F.	489	2018	3350	3400	0.1812			-68
AT	VERNAGT F.	489	2018	3300	3350	0.3044			-104
AT	VERNAGT F.	489	2018	3250	3300	0.7812			-172
AT	VERNAGT F.	489	2018	3200	3250	0.8352			-451
AT	VERNAGT F.	489	2018	3150	3200	1.0496			-927
AT	VERNAGT F.	489	2018	3100	3150	1.0736			-1512
AT	VERNAGT F.	489	2018	3050	3100	0.935			-2177
AT	VERNAGT F.	489	2018	3000	3050	0.8076			-2860
AT	VERNAGT F.	489	2018	2950	3000	0.4676			-3614
AT	VERNAGT F.	489	2018	2900	2950	0.1476			-3954
AT	VERNAGT F.	489	2018	2850	2900	0.0069			-3908
AT	VERNAGT F.	489	2019	3550	3600	0.0024			8
AT	VERNAGT F.	489	2019	3500	3550	0.0097			-20
AT	VERNAGT F.	489	2019	3450	3500	0.1241			170
AT	VERNAGT F.	489	2019	3400	3450	0.1567			95
AT	VERNAGT F.	489	2019	3350	3400	0.1844			9
AT	VERNAGT F.	489	2019	3300	3350	0.2631			-6
AT	VERNAGT F.	489	2019	3250	3300	0.7328			-66
AT	VERNAGT F.	489	2019	3200	3250	0.8193			-283
AT	VERNAGT F.	489	2019	3150	3200	1.0203			-664
AT	VERNAGT F.	489	2019	3100	3150	1.0253			-1019
AT	VERNAGT F.	489	2019	3050	3100	0.8877			-1276
AT	VERNAGT F.	489	2019	3000	3050	0.8231			-1630
AT	VERNAGT F.	489	2019	2950	3000	0.5345			-2178
AT	VERNAGT F.	489	2019	2900	2950	0.2674			-2664
AT	VERNAGT F.	489	2019	2850	2900	0.0341			-2365
AT	WURTEN K.	545	2018	2750	2800	0.001			17
AT	WURTEN K.	545	2018	2700	2750	0.011			-495
AT	WURTEN K.	545	2018	2650	2700	0.117			-900
AT	WURTEN K.	545	2018	2600	2650	0.104			-2641
AT	WURTEN K.	545	2018	2550	2600	0.051			-3323
AT	WURTEN K.	545	2019	2700	2750	0.003			-23
AT	WURTEN K.	545	2019	2650	2700	0.102			-265
AT	WURTEN K.	545	2019	2600	2650	0.094			-1798
AT	WURTEN K.	545	2019	2550	2600	0.036			-2609
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3400	3450	0.01	500	-1250	-750
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3350	3400	0.114	503	-1239	-736
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3300	3350	0.191	774	-1356	-582
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3250	3300	0.274	950	-1663	-713
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3200	3250	0.369	1315	-1425	-110
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3150	3200	0.272	1530	-1599	-69
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3100	3150	0.22	1518	-1802	-284
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3050	3100	0.227	1362	-2228	-866
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	3000	3050	0.252	1200	-2799	-1599
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2950	3000	0.232	1188	-3575	-2387

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2900	2950	0.244	1061	-3736	-2675
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2850	2900	0.183	936	-3516	-2580
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2800	2850	0.114	954	-4088	-3134
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2750	2800	0.055	808	-4564	-3756
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2700	2750	0.018	500	-4750	-4250
AT	ZETTALUNITZ/MULLWITZ K.	578	2018	2650	2700	0	500	-4750	-4250
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3400	3450	0.01	700	-1474	-774
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3350	3400	0.106	949	-1624	-675
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3300	3350	0.191	1405	-1876	-471
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3250	3300	0.274	1455	-2421	-966
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3200	3250	0.365	2045	-2132	-87
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3150	3200	0.263	2060	-2173	-113
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3100	3150	0.214	1996	-2128	-132
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3050	3100	0.215	1908	-2270	-362
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	3000	3050	0.231	1794	-2655	-861
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	2950	3000	0.203	1771	-2609	-838
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	2900	2950	0.207	1743	-3042	-1299
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	2850	2900	0.142	1697	-2520	-823
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	2800	2850	0.104	1552	-2625	-1073
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	2750	2800	0.035	1326	-3790	-2464
AT	ZETTALUNITZ/MULLWITZ K.	578	2019	2700	2750	0.004	1300	-4550	-3250
BO - Bolivia									
BO	CHARQUINI SUR	2667	2018	5350	5400	0.002			807
BO	CHARQUINI SUR	2667	2018	5300	5350	0.011			807
BO	CHARQUINI SUR	2667	2018	5250	5300	0.036			1120
BO	CHARQUINI SUR	2667	2018	5200	5250	0.046			494
BO	CHARQUINI SUR	2667	2018	5150	5200	0.092			-60
BO	CHARQUINI SUR	2667	2018	5100	5150	0.082			-640
BO	CHARQUINI SUR	2667	2018	5050	5100	0.017			-1336
BO	ZONGO	1503	2018	6000	6100	0.016			1158
BO	ZONGO	1503	2018	5900	6000	0.057			1158
BO	ZONGO	1503	2018	5800	5900	0.103			1158
BO	ZONGO	1503	2018	5700	5800	0.195			1158
BO	ZONGO	1503	2018	5600	5700	0.261			1203
BO	ZONGO	1503	2018	5500	5600	0.282			1185
BO	ZONGO	1503	2018	5400	5500	0.223			811
BO	ZONGO	1503	2018	5300	5400	0.156			438
BO	ZONGO	1503	2018	5200	5300	0.125			65
BO	ZONGO	1503	2018	5100	5200	0.206			-210
BO	ZONGO	1503	2018	5000	5100	0.172			-3369
BO	ZONGO	1503	2018	4900	5000	0.027			-7203
CA - Canada									
CA	CONRAD	10498	2018	3200	3300	0.014	1310	-739	571
CA	CONRAD	10498	2018	3100	3200	0.143	1734	-579	1155
CA	CONRAD	10498	2018	3000	3100	0.364	1973	-234	1739
CA	CONRAD	10498	2018	2900	3000	1.797	1921	-282	1639
CA	CONRAD	10498	2018	2800	2900	0.89	1997	-1163	834
CA	CONRAD	10498	2018	2700	2800	1.034	1986	-1710	276
CA	CONRAD	10498	2018	2600	2700	1.236	1958	-1908	50
CA	CONRAD	10498	2018	2500	2600	1.157	2092	-2829	-737
CA	CONRAD	10498	2018	2400	2500	1.803	1819	-2846	-1027
CA	CONRAD	10498	2018	2300	2400	1.177	1738	-2884	-1146
CA	CONRAD	10498	2018	2200	2300	0.705	1547	-4343	-2796
CA	CONRAD	10498	2018	2100	2200	0.666	1241	-4622	-3381
CA	CONRAD	10498	2018	2000	2100	0.281	1015	-5372	-4357
CA	CONRAD	10498	2018	1900	2000	0.067	1117	-5732	-4615
CA	CONRAD	10498	2018	1800	1900	0.016	1041	-5930	-4889
CA	CONRAD	10498	2019	3200	3300	0.014	856		
CA	CONRAD	10498	2019	3100	3200	0.143	1239		
CA	CONRAD	10498	2019	3000	3100	0.364	1701		
CA	CONRAD	10498	2019	2900	3000	1.797	1675		
CA	CONRAD	10498	2019	2800	2900	0.89	1654		
CA	CONRAD	10498	2019	2700	2800	1.034	1668		
CA	CONRAD	10498	2019	2600	2700	1.236	1639		
CA	CONRAD	10498	2019	2500	2600	1.157	1767		
CA	CONRAD	10498	2019	2400	2500	1.803	1575		
CA	CONRAD	10498	2019	2300	2400	1.177	1474		
CA	CONRAD	10498	2019	2200	2300	0.705	1406		
CA	CONRAD	10498	2019	2100	2200	0.666	1147		
CA	CONRAD	10498	2019	2000	2100	0.281	998		
CA	CONRAD	10498	2019	1900	2000	0.067	1078		
CA	CONRAD	10498	2019	1800	1900	0.016	1110		
CA	ILLECILLEWAET	1400	2018	2600	2900	3.4818	2037	-1645	392
CA	ILLECILLEWAET	1400	2018	2350	2600	3.4121	1674	-3461	-1787
CA	ILLECILLEWAET	1400	2018	2000	2350	0.799	1060	-5208	-4148
CA	ILLECILLEWAET	1400	2019	2600	2900	3.4818			1127
CA	ILLECILLEWAET	1400	2019	2350	2600	3.4121			-1770
CA	ILLECILLEWAET	1400	2019	2000	2350	0.799			-4035
CA	KOKANEE	23	2018	2700	2800	0.284	2368	-1946	422
CA	KOKANEE	23	2018	2600	2700	0.633	2264	-1916	348
CA	KOKANEE	23	2018	2500	2600	0.462	2271	-2260	11
CA	KOKANEE	23	2018	2400	2500	0.282	2144	-2550	-406
CA	KOKANEE	23	2018	2300	2400	0.083	2118	-3838	-1720
CA	KOKANEE	23	2018	2200	2300	0.034	2034	-3904	-1870
CA	KOKANEE	23	2019	2700	2800	0.284			55
CA	KOKANEE	23	2019	2600	2700	0.633			-196
CA	KOKANEE	23	2019	2500	2600	0.462			-1487
CA	KOKANEE	23	2019	2400	2500	0.282			-2120
CA	KOKANEE	23	2019	2300	2400	0.083			-3367
CA	KOKANEE	23	2019	2200	2300	0.034			-3367
CA	NORDIC	10497	2018	2900	3000	0.05	2251	-1622	629
CA	NORDIC	10497	2018	2800	2900	0.234	2251	-1622	629
CA	NORDIC	10497	2018	2700	2800	0.488	2276	-2040	236
CA	NORDIC	10497	2018	2600	2700	0.491	2464	-1790	674

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CA	NORDIC	10497	2018	2500	2600	0.466	2258	-2089	169
CA	NORDIC	10497	2018	2400	2500	0.594	2391	-2966	-575
CA	NORDIC	10497	2018	2300	2400	0.443	2138	-3238	-1100
CA	NORDIC	10497	2018	2200	2300	0.328	1906	-3893	-1987
CA	NORDIC	10497	2018	2100	2200	0.269	1758	-4207	-2449
CA	NORDIC	10497	2018	2000	2100	0.016	1764	-4463	-2699
CA	NORDIC	10497	2019	2900	3000	0.05	2084		
CA	NORDIC	10497	2019	2800	2900	0.234	2084		
CA	NORDIC	10497	2019	2700	2800	0.488	1874		
CA	NORDIC	10497	2019	2600	2700	0.491	1745		
CA	NORDIC	10497	2019	2500	2600	0.466	1812		
CA	NORDIC	10497	2019	2400	2500	0.594	1766		
CA	NORDIC	10497	2019	2300	2400	0.443	1782		
CA	NORDIC	10497	2019	2200	2300	0.328	1494		
CA	NORDIC	10497	2019	2100	2200	0.269	1363		
CA	NORDIC	10497	2019	2000	2100	0.016	1244		
CA	WHITE	0	2018	1775	1800	0.0076			272
CA	WHITE	0	2018	1750	1775	0.0376			272
CA	WHITE	0	2018	1725	1750	0.059			272
CA	WHITE	0	2018	1700	1725	0.0768			272
CA	WHITE	0	2018	1675	1700	0.0762			272
CA	WHITE	0	2018	1650	1675	0.1031			272
CA	WHITE	0	2018	1625	1650	0.1965			272
CA	WHITE	0	2018	1600	1625	0.1838			272
CA	WHITE	0	2018	1575	1600	0.2632			272
CA	WHITE	0	2018	1550	1575	0.4459			272
CA	WHITE	0	2018	1525	1550	0.4929			272
CA	WHITE	0	2018	1500	1525	0.6284			276
CA	WHITE	0	2018	1475	1500	0.7356			279
CA	WHITE	0	2018	1450	1475	0.8017			280
CA	WHITE	0	2018	1425	1450	1.0921			280
CA	WHITE	0	2018	1400	1425	1.2253			279
CA	WHITE	0	2018	1375	1400	1.4121			277
CA	WHITE	0	2018	1350	1375	1.4211			273
CA	WHITE	0	2018	1325	1350	1.5746			268
CA	WHITE	0	2018	1300	1325	1.3351			261
CA	WHITE	0	2018	1275	1300	1.3699			254
CA	WHITE	0	2018	1250	1275	1.6656			245
CA	WHITE	0	2018	1225	1250	1.278			234
CA	WHITE	0	2018	1200	1225	1.2769			222
CA	WHITE	0	2018	1175	1200	1.2332			209
CA	WHITE	0	2018	1150	1175	1.3278			195
CA	WHITE	0	2018	1125	1150	1.2705			179
CA	WHITE	0	2018	1100	1125	1.1769			162
CA	WHITE	0	2018	1075	1100	1.1279			143
CA	WHITE	0	2018	1050	1075	1.0202			123
CA	WHITE	0	2018	1025	1050	0.859			102
CA	WHITE	0	2018	1000	1025	0.7342			79
CA	WHITE	0	2018	975	1000	0.8021			55
CA	WHITE	0	2018	950	975	0.8773			29
CA	WHITE	0	2018	925	950	0.5373			2
CA	WHITE	0	2018	900	925	0.4547			-26
CA	WHITE	0	2018	875	900	0.4761			-56
CA	WHITE	0	2018	850	875	0.7492			-88
CA	WHITE	0	2018	825	850	0.5408			-120
CA	WHITE	0	2018	800	825	0.4			-155
CA	WHITE	0	2018	775	800	0.3016			-191
CA	WHITE	0	2018	750	775	0.2746			-228
CA	WHITE	0	2018	725	750	0.2499			-267
CA	WHITE	0	2018	700	725	0.2359			-307
CA	WHITE	0	2018	675	700	0.6298			-348
CA	WHITE	0	2018	650	675	0.2896			-392
CA	WHITE	0	2018	625	650	0.2136			-437
CA	WHITE	0	2018	600	625	0.455			-483
CA	WHITE	0	2018	575	600	0.4927			-531
CA	WHITE	0	2018	550	575	0.2918			-580
CA	WHITE	0	2018	525	550	0.1897			-631
CA	WHITE	0	2018	500	525	0.2059			-683
CA	WHITE	0	2018	475	500	0.2029			-737
CA	WHITE	0	2018	450	475	0.2771			-793
CA	WHITE	0	2018	425	450	0.2			-850
CA	WHITE	0	2018	400	425	0.145			-909
CA	WHITE	0	2018	375	400	0.1748			-969
CA	WHITE	0	2018	350	375	0.2542			-1031
CA	WHITE	0	2018	325	350	0.4015			-1095
CA	WHITE	0	2018	300	325	0.2106			-1160
CA	WHITE	0	2018	275	300	0.1129			-1227
CA	WHITE	0	2018	250	275	0.1169			-1295
CA	WHITE	0	2018	225	250	0.352			-1366
CA	WHITE	0	2018	200	225	0.2692			-1437
CA	WHITE	0	2018	175	200	0.3674			-1511
CA	WHITE	0	2018	150	175	0.1282			-1586
CA	WHITE	0	2018	125	150	0.0797			-1662
CA	WHITE	0	2018	100	125	0.057			-1662
CA	WHITE	0	2018	75	100	0.0154			-1662
CA	ZILLMER	10496	2018	2800	2900	0.035	1740	-1725	15
CA	ZILLMER	10496	2018	2700	2800	0.174	1740	-1705	35
CA	ZILLMER	10496	2018	2600	2700	0.47	1980	-1831	149
CA	ZILLMER	10496	2018	2500	2600	1.073	2140	-1303	837
CA	ZILLMER	10496	2018	2400	2500	0.835	1900	-1672	228
CA	ZILLMER	10496	2018	2300	2400	0.802	1890	-2155	-265
CA	ZILLMER	10496	2018	2200	2300	0.823	1490	-3179	-1689
CA	ZILLMER	10496	2018	2100	2200	0.65	1470	-4098	-2628
CA	ZILLMER	10496	2018	2000	2100	0.428	1590	-4818	-3228
CA	ZILLMER	10496	2018	1900	2000	0.136	1690	-5835	-4145
CA	ZILLMER	10496	2018	1800	1900	0.005	1560	-5705	-4145

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CH - Switzerland									
CH	ADLER	3801	2018	4100	4200	0.0038	1112	204	1316
CH	ADLER	3801	2018	4000	4100	0.0144	1412	267	1679
CH	ADLER	3801	2018	3900	4000	0.0462	1356	119	1475
CH	ADLER	3801	2018	3800	3900	0.1031	1222	-47	1175
CH	ADLER	3801	2018	3700	3800	0.1769	1296	-229	1067
CH	ADLER	3801	2018	3600	3700	0.2081	1289	-566	723
CH	ADLER	3801	2018	3500	3600	0.2462	1353	-942	411
CH	ADLER	3801	2018	3400	3500	0.315	1323	-1529	-206
CH	ADLER	3801	2018	3300	3400	0.3988	1249	-2262	-1013
CH	ADLER	3801	2018	3200	3300	0.2525	1314	-3317	-2003
CH	ADLER	3801	2018	3100	3200	0.1231	1404	-3878	-2474
CH	ADLER	3801	2018	3000	3100	0.0856	1305	-4410	-3105
CH	ADLER	3801	2018	2900	3000	0.0056	1227	-4936	-3709
CH	ADLER	3801	2019	4100	4200	0.0038	653		452
CH	ADLER	3801	2019	4000	4100	0.0144	853		684
CH	ADLER	3801	2019	3900	4000	0.0463	895		639
CH	ADLER	3801	2019	3800	3900	0.1031	790		406
CH	ADLER	3801	2019	3700	3800	0.1769	845		300
CH	ADLER	3801	2019	3600	3700	0.2081	843		-15
CH	ADLER	3801	2019	3500	3600	0.2463	933		-278
CH	ADLER	3801	2019	3400	3500	0.315	1021		-732
CH	ADLER	3801	2019	3300	3400	0.3988	1137		-1122
CH	ADLER	3801	2019	3200	3300	0.2525	1196		-1949
CH	ADLER	3801	2019	3100	3200	0.1231	1189		-2428
CH	ADLER	3801	2019	3000	3100	0.0856	1221		-2616
CH	ADLER	3801	2019	2900	3000	0.0056	1210		-3035
CH	ALLALIN	394	2018	4100	4200	0.0912	695	-535	160
CH	ALLALIN	394	2018	4000	4100	0.1812	799	-567	232
CH	ALLALIN	394	2018	3900	4000	0.2906	903	-671	232
CH	ALLALIN	394	2018	3800	3900	0.4488	979	-796	183
CH	ALLALIN	394	2018	3700	3800	0.5175	1066	-869	197
CH	ALLALIN	394	2018	3600	3700	0.8375	1153	-1109	44
CH	ALLALIN	394	2018	3500	3600	0.9488	1211	-1294	-83
CH	ALLALIN	394	2018	3400	3500	1.0631	1221	-1480	-259
CH	ALLALIN	394	2018	3300	3400	1.005	1199	-1401	-202
CH	ALLALIN	394	2018	3200	3300	1.5919	1195	-2169	-974
CH	ALLALIN	394	2018	3100	3200	0.7388	1188	-2531	-1343
CH	ALLALIN	394	2018	3000	3100	0.7169	1160	-3106	-1946
CH	ALLALIN	394	2018	2900	3000	0.4862	1112	-3760	-2648
CH	ALLALIN	394	2018	2800	2900	0.5725	1060	-4215	-3155
CH	ALLALIN	394	2018	2700	2800	0.1544	1042	-4182	-3140
CH	ALLALIN	394	2018	2600	2700	0.0019	1022	-3819	-2797
CH	ALLALIN	394	2019	4100	4200	0.0913			389
CH	ALLALIN	394	2019	4000	4100	0.1813			462
CH	ALLALIN	394	2019	3900	4000	0.2906			483
CH	ALLALIN	394	2019	3800	3900	0.4488			460
CH	ALLALIN	394	2019	3700	3800	0.5175			465
CH	ALLALIN	394	2019	3600	3700	0.8375			324
CH	ALLALIN	394	2019	3500	3600	0.9488			186
CH	ALLALIN	394	2019	3400	3500	1.0631			-18
CH	ALLALIN	394	2019	3300	3400	1.005			-206
CH	ALLALIN	394	2019	3200	3300	1.5919			-1017
CH	ALLALIN	394	2019	3100	3200	0.7388			-1291
CH	ALLALIN	394	2019	3000	3100	0.7125			-1545
CH	ALLALIN	394	2019	2900	3000	0.4631			-1922
CH	ALLALIN	394	2019	2800	2900	0.5281			-2540
CH	ALLALIN	394	2019	2700	2800	0.1344			-2724
CH	ALLALIN	394	2019	2600	2700	0.0006			-2247
CH	BASODINO	463	2018	3100	3200	0.0544	1586	-3109	-1523
CH	BASODINO	463	2018	3000	3100	0.3125	1976	-3144	-1168
CH	BASODINO	463	2018	2900	3000	0.5212	2261	-3289	-1028
CH	BASODINO	463	2018	2800	2900	0.4225	2162	-3860	-1698
CH	BASODINO	463	2018	2700	2800	0.3388	2073	-3866	-1793
CH	BASODINO	463	2018	2600	2700	0.1081	2142	-4209	-2067
CH	BASODINO	463	2019	3100	3200	0.0544	1756		-320
CH	BASODINO	463	2019	3000	3100	0.3125	2212		10
CH	BASODINO	463	2019	2900	3000	0.5212	2508		50
CH	BASODINO	463	2019	2800	2900	0.4225	2539		-709
CH	BASODINO	463	2019	2700	2800	0.3388	2449		-689
CH	BASODINO	463	2019	2600	2700	0.1081	2353		-561
CH	CLARIDENFIRN	2660	2018	3200	3300	0.0056	0	0	0
CH	CLARIDENFIRN	2660	2018	3100	3200	0.0312	1519	-1951	-432
CH	CLARIDENFIRN	2660	2018	3000	3100	0.1938	1992	-2213	-221
CH	CLARIDENFIRN	2660	2018	2900	3000	1.4975	1884	-3063	-1179
CH	CLARIDENFIRN	2660	2018	2800	2900	1.3044	2064	-3319	-1255
CH	CLARIDENFIRN	2660	2018	2700	2800	0.6925	2011	-3513	-1502
CH	CLARIDENFIRN	2660	2018	2600	2700	0.755	2067	-4447	-2380
CH	CLARIDENFIRN	2660	2018	2500	2600	0.0706	1599	-7856	-6257
CH	CLARIDENFIRN	2660	2019	3100	3200	0.0256	1750		-368
CH	CLARIDENFIRN	2660	2019	3000	3100	0.1525	2345		-98
CH	CLARIDENFIRN	2660	2019	2900	3000	1.3631	2218		-800
CH	CLARIDENFIRN	2660	2019	2800	2900	1.3319	2396		-854
CH	CLARIDENFIRN	2660	2019	2700	2800	0.6675	2292		-1415
CH	CLARIDENFIRN	2660	2019	2600	2700	0.7225	2517		-1340
CH	CLARIDENFIRN	2660	2019	2500	2600	0.0575	1873		-3235
CH	CORBASSIERE	366	2018	4300	4400	0.0062	348	-21	327
CH	CORBASSIERE	366	2018	4200	4300	0.0794	466	4	470
CH	CORBASSIERE	366	2018	4100	4200	0.2406	603	-46	557
CH	CORBASSIERE	366	2018	4000	4100	0.5331	682	-116	566
CH	CORBASSIERE	366	2018	3900	4000	0.2238	741	-110	631
CH	CORBASSIERE	366	2018	3800	3900	0.2469	876	-198	678
CH	CORBASSIERE	366	2018	3700	3800	0.31	973	-348	625
CH	CORBASSIERE	366	2018	3600	3700	0.4162	1094	-543	551
CH	CORBASSIERE	366	2018	3500	3600	0.9225	1187	-838	349
CH	CORBASSIERE	366	2018	3400	3500	1.3638	1296	-1143	153

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CH	CORBASSIERE	366	2018	3300	3400	2.3438	1385	-1528	-143
CH	CORBASSIERE	366	2018	3200	3300	1.5519	1467	-1916	-449
CH	CORBASSIERE	366	2018	3100	3200	1.0088	1573	-2062	-489
CH	CORBASSIERE	366	2018	3000	3100	1.6488	1573	-2728	-1155
CH	CORBASSIERE	366	2018	2900	3000	0.8894	1522	-2939	-1417
CH	CORBASSIERE	366	2018	2800	2900	0.6637	1471	-3227	-1756
CH	CORBASSIERE	366	2018	2700	2800	0.71	1390	-4071	-2681
CH	CORBASSIERE	366	2018	2600	2700	1.0869	1318	-5076	-3758
CH	CORBASSIERE	366	2018	2500	2600	0.4662	1235	-5444	-4209
CH	CORBASSIERE	366	2018	2400	2500	0.3206	1133	-6116	-4983
CH	CORBASSIERE	366	2018	2300	2400	0.0494	1091	-6235	-5144
CH	CORBASSIERE	366	2019	4300	4400	0.0062			198
CH	CORBASSIERE	366	2019	4200	4300	0.0794			357
CH	CORBASSIERE	366	2019	4100	4200	0.2406			435
CH	CORBASSIERE	366	2019	4000	4100	0.5331			446
CH	CORBASSIERE	366	2019	3900	4000	0.2238			570
CH	CORBASSIERE	366	2019	3800	3900	0.2469			646
CH	CORBASSIERE	366	2019	3700	3800	0.31			595
CH	CORBASSIERE	366	2019	3600	3700	0.4162			525
CH	CORBASSIERE	366	2019	3500	3600	0.9225			314
CH	CORBASSIERE	366	2019	3400	3500	1.3638			123
CH	CORBASSIERE	366	2019	3300	3400	2.3438			-164
CH	CORBASSIERE	366	2019	3200	3300	1.5519			-448
CH	CORBASSIERE	366	2019	3100	3200	1.0088			-412
CH	CORBASSIERE	366	2019	3000	3100	1.6488			-1064
CH	CORBASSIERE	366	2019	2900	3000	0.8894			-1288
CH	CORBASSIERE	366	2019	2800	2900	0.6638			-1563
CH	CORBASSIERE	366	2019	2700	2800	0.71			-2709
CH	CORBASSIERE	366	2019	2600	2700	1.0869			-3711
CH	CORBASSIERE	366	2019	2500	2600	0.4663			-3871
CH	CORBASSIERE	366	2019	2400	2500	0.3206			-4559
CH	CORBASSIERE	366	2019	2300	2400	0.0494			-4926
CH	CORVATSCH SOUTH	4535	2018	3400	3450	0.0017	1008	-1324	-316
CH	CORVATSCH SOUTH	4535	2018	3350	3400	0.0114	1056	-1167	-111
CH	CORVATSCH SOUTH	4535	2018	3300	3350	0.0312	1065	-1800	-735
CH	CORVATSCH SOUTH	4535	2018	3250	3300	0.0808	824	-2900	-2076
CH	CORVATSCH SOUTH	4535	2018	3200	3250	0.0607	683	-3081	-2398
CH	CORVATSCH SOUTH	4535	2018	3150	3200	0.0212	809	-2862	-2053
CH	CORVATSCH SOUTH	4535	2018	3100	3150	0.0053	891	-2537	-1646
CH	CORVATSCH SOUTH	4535	2018	3050	3100	0.0084	886	-2605	-1719
CH	CORVATSCH SOUTH	4535	2018	3000	3050	0.0005	846	-2005	-1159
CH	CORVATSCH SOUTH	4535	2019	3400	3450	0.0017	963		-619
CH	CORVATSCH SOUTH	4535	2019	3350	3400	0.0114	964		-1118
CH	CORVATSCH SOUTH	4535	2019	3300	3350	0.0312	919		-1817
CH	CORVATSCH SOUTH	4535	2019	3250	3300	0.0808	838		-2145
CH	CORVATSCH SOUTH	4535	2019	3200	3250	0.0607	756		-2393
CH	CORVATSCH SOUTH	4535	2019	3150	3200	0.0212	918		-2065
CH	CORVATSCH SOUTH	4535	2019	3100	3150	0.0053	1087		-1810
CH	CORVATSCH SOUTH	4535	2019	3050	3100	0.0084	1000		-2099
CH	CORVATSCH SOUTH	4535	2019	3000	3050	0.0005	984		-1390
CH	FINDELEN	389	2018	3900	4000	0.0106	1049	-561	488
CH	FINDELEN	389	2018	3800	3900	0.2519	1310	-670	640
CH	FINDELEN	389	2018	3700	3800	0.3012	1443	-764	679
CH	FINDELEN	389	2018	3600	3700	0.4394	1713	-900	813
CH	FINDELEN	389	2018	3500	3600	1.6087	1761	-1134	627
CH	FINDELEN	389	2018	3400	3500	2.3575	1869	-1274	595
CH	FINDELEN	389	2018	3300	3400	1.9512	1738	-1528	210
CH	FINDELEN	389	2018	3200	3300	1.8325	1418	-2417	-999
CH	FINDELEN	389	2018	3100	3200	1.7156	1330	-3038	-1708
CH	FINDELEN	389	2018	3000	3100	0.9956	1200	-3673	-2473
CH	FINDELEN	389	2018	2900	3000	0.5781	1104	-4190	-3086
CH	FINDELEN	389	2018	2800	2900	0.3269	1044	-4898	-3854
CH	FINDELEN	389	2018	2700	2800	0.1844	936	-6299	-5363
CH	FINDELEN	389	2018	2600	2700	0.16	793	-7461	-6668
CH	FINDELEN	389	2018	2500	2600	0.0644	718	-8016	-7298
CH	FINDELEN	389	2019	3900	4000	0.0106	938		647
CH	FINDELEN	389	2019	3800	3900	0.2519	1167		783
CH	FINDELEN	389	2019	3700	3800	0.3012	1222		742
CH	FINDELEN	389	2019	3600	3700	0.4394	1399		790
CH	FINDELEN	389	2019	3500	3600	1.6088	1655		915
CH	FINDELEN	389	2019	3400	3500	2.3588	1790		979
CH	FINDELEN	389	2019	3300	3400	1.9669	1634		550
CH	FINDELEN	389	2019	3200	3300	1.8569	1450		-394
CH	FINDELEN	389	2019	3100	3200	1.6781	1357		-1242
CH	FINDELEN	389	2019	3000	3100	0.9806	1246		-1841
CH	FINDELEN	389	2019	2900	3000	0.5438	1142		-2060
CH	FINDELEN	389	2019	2800	2900	0.2875	985		-2972
CH	FINDELEN	389	2019	2700	2800	0.1775	668		-4890
CH	FINDELEN	389	2019	2600	2700	0.1506	595		-6041
CH	FINDELEN	389	2019	2500	2600	0.055	607		-6712
CH	GIETRO	367	2018	3800	3900	0.0088	1236	-489	747
CH	GIETRO	367	2018	3700	3800	0.1156	1214	-489	725
CH	GIETRO	367	2018	3600	3700	0.1212	1230	-550	680
CH	GIETRO	367	2018	3500	3600	0.1169	1367	-699	668
CH	GIETRO	367	2018	3400	3500	0.1725	1484	-871	613
CH	GIETRO	367	2018	3300	3400	0.9162	1503	-1081	422
CH	GIETRO	367	2018	3200	3300	1.6412	1532	-1566	-34
CH	GIETRO	367	2018	3100	3200	0.985	1490	-2442	-952
CH	GIETRO	367	2018	3000	3100	0.8694	1409	-3661	-2252
CH	GIETRO	367	2018	2900	3000	0.225	1226	-4870	-3644
CH	GIETRO	367	2018	2800	2900	0.0712	1178	-5801	-4623
CH	GIETRO	367	2018	2700	2800	0.03	1314	-6305	-4991
CH	GIETRO	367	2019	3800	3900	0.0088			599
CH	GIETRO	367	2019	3700	3800	0.1156			600
CH	GIETRO	367	2019	3600	3700	0.1212			571
CH	GIETRO	367	2019	3500	3600	0.1169			554

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CH	GIETRO	367	2019	3400	3500	0.1725			396
CH	GIETRO	367	2019	3300	3400	0.9163			-378
CH	GIETRO	367	2019	3200	3300	1.6412			-996
CH	GIETRO	367	2019	3100	3200	0.9925			-1655
CH	GIETRO	367	2019	3000	3100	0.8812			-2644
CH	GIETRO	367	2019	2900	3000	0.2206			-3681
CH	GIETRO	367	2019	2800	2900	0.0662			-4768
CH	GIETRO	367	2019	2753	3817	5.28			-1318
CH	GIETRO	367	2019	2700	2800	0.0269			-5843
CH	GRIES	359	2018	3300	3400	0.0006	749	-2099	-1350
CH	GRIES	359	2018	3200	3300	0.0712	1276	-2790	-1514
CH	GRIES	359	2018	3100	3200	0.1956	2038	-2866	-828
CH	GRIES	359	2018	3000	3100	1.3769	2346	-3530	-1184
CH	GRIES	359	2018	2900	3000	0.9919	2184	-3793	-1609
CH	GRIES	359	2018	2800	2900	0.575	2022	-3815	-1793
CH	GRIES	359	2018	2700	2800	0.2894	1949	-4269	-2320
CH	GRIES	359	2018	2600	2700	0.1612	1830	-5058	-3228
CH	GRIES	359	2018	2500	2600	0.5719	1593	-5953	-4360
CH	GRIES	359	2018	2400	2500	0.1138	1482	-7471	-5989
CH	GRIES	359	2019	3300	3400	0.0006	723		-941
CH	GRIES	359	2019	3200	3300	0.0713	1238		-820
CH	GRIES	359	2019	3100	3200	0.1956	1888		-108
CH	GRIES	359	2019	3000	3100	1.3769	2137		-279
CH	GRIES	359	2019	2900	3000	0.9919	2149		-500
CH	GRIES	359	2019	2800	2900	0.575	2174		-704
CH	GRIES	359	2019	2700	2800	0.2894	2021		-1061
CH	GRIES	359	2019	2600	2700	0.1612	1789		-1734
CH	GRIES	359	2019	2500	2600	0.5719	1530		-2540
CH	GRIES	359	2019	2400	2500	0.1138	1465		-3141
CH	HOHLAUB	3332	2018	4000	4100	0.0044	612	-608	4
CH	HOHLAUB	3332	2018	3900	4000	0.0281	742	-442	300
CH	HOHLAUB	3332	2018	3800	3900	0.0738	956	-673	283
CH	HOHLAUB	3332	2018	3700	3800	0.0688	992	-661	331
CH	HOHLAUB	3332	2018	3600	3700	0.0631	1100	-641	459
CH	HOHLAUB	3332	2018	3500	3600	0.1181	1384	-867	517
CH	HOHLAUB	3332	2018	3400	3500	0.1719	1507	-1132	375
CH	HOHLAUB	3332	2018	3300	3400	0.2794	1523	-1490	33
CH	HOHLAUB	3332	2018	3200	3300	0.2944	1451	-1805	-354
CH	HOHLAUB	3332	2018	3100	3200	0.3725	1396	-2184	-788
CH	HOHLAUB	3332	2018	3000	3100	0.4044	1295	-2813	-1518
CH	HOHLAUB	3332	2018	2900	3000	0.2319	1189	-3309	-2120
CH	HOHLAUB	3332	2018	2800	2900	0.0175	1033	-3333	-2300
CH	HOHLAUB	3332	2019	4000	4100	0.0044			156
CH	HOHLAUB	3332	2019	3900	4000	0.0281			388
CH	HOHLAUB	3332	2019	3800	3900	0.0738			386
CH	HOHLAUB	3332	2019	3700	3800	0.0688			405
CH	HOHLAUB	3332	2019	3600	3700	0.0631			479
CH	HOHLAUB	3332	2019	3500	3600	0.1181			455
CH	HOHLAUB	3332	2019	3400	3500	0.1719			218
CH	HOHLAUB	3332	2019	3300	3400	0.2794			-284
CH	HOHLAUB	3332	2019	3200	3300	0.2944			-845
CH	HOHLAUB	3332	2019	3100	3200	0.3725			-1394
CH	HOHLAUB	3332	2019	3000	3100	0.4044			-2312
CH	HOHLAUB	3332	2019	2900	3000	0.2319			-3140
CH	HOHLAUB	3332	2019	2800	2900	0.0175			-3392
CH	MURTEL VADRET DAL	4339	2018	3300	3350	0.001	1555	-441	1114
CH	MURTEL VADRET DAL	4339	2018	3250	3300	0.0159	1665	-1248	417
CH	MURTEL VADRET DAL	4339	2018	3200	3250	0.1052	1436	-1888	-452
CH	MURTEL VADRET DAL	4339	2018	3150	3200	0.1093	1083	-2736	-1653
CH	MURTEL VADRET DAL	4339	2018	3100	3150	0.0524	969	-3085	-2116
CH	MURTEL VADRET DAL	4339	2018	3050	3100	0.0106	904	-3905	-3001
CH	MURTEL VADRET DAL	4339	2019	3300	3350	0.001	1556		1021
CH	MURTEL VADRET DAL	4339	2019	3250	3300	0.0159	1653		506
CH	MURTEL VADRET DAL	4339	2019	3200	3250	0.1052	1447		-628
CH	MURTEL VADRET DAL	4339	2019	3150	3200	0.1093	1071		-1608
CH	MURTEL VADRET DAL	4339	2019	3100	3150	0.0524	763		-2287
CH	MURTEL VADRET DAL	4339	2019	3050	3100	0.0077	866		-3419
CH	PIZOL	417	2018	2750	2800	0.001	2217	-2894	-677
CH	PIZOL	417	2018	2700	2750	0.0115	2225	-3286	-1061
CH	PIZOL	417	2018	2650	2700	0.0225	1888	-4118	-2230
CH	PIZOL	417	2018	2600	2650	0.0021	1779	-4347	-2568
CH	PIZOL	417	2019	2750	2800	0.0005	1497		-689
CH	PIZOL	417	2019	2700	2750	0.007	1623		-643
CH	PIZOL	417	2019	2650	2700	0.0171	1640		-853
CH	PIZOL	417	2019	2600	2650	0.0013	1432		-1565
CH	PLAINE MORTE, GLACIER DE LA	4630	2018	2900	3000	0.015	2243	-2246	-3
CH	PLAINE MORTE, GLACIER DE LA	4630	2018	2800	2900	0.0625	2272	-2634	-362
CH	PLAINE MORTE, GLACIER DE LA	4630	2018	2700	2800	4.6762	2304	-4312	-2008
CH	PLAINE MORTE, GLACIER DE LA	4630	2018	2600	2700	2.3162	2307	-4633	-2326
CH	PLAINE MORTE, GLACIER DE LA	4630	2018	2500	2600	0.1438	2232	-4711	-2479
CH	PLAINE MORTE, GLACIER DE LA	4630	2018	2400	2500	0.0056	2226	-4492	-2266
CH	PLAINE MORTE, GLACIER DE LA	4630	2019	2800	2900	0.0213	1581		-160
CH	PLAINE MORTE, GLACIER DE LA	4630	2019	2700	2800	4.3194	1589		-1717
CH	PLAINE MORTE, GLACIER DE LA	4630	2019	2600	2700	2.6044	1668		-1858
CH	PLAINE MORTE, GLACIER DE LA	4630	2019	2500	2600	0.1612	1659		-1947
CH	PLAINE MORTE, GLACIER DE LA	4630	2019	2400	2500	0.0062	1651		-1828
CH	RHONE	473	2018	3500	3600	0.3344	1555	-1057	498
CH	RHONE	473	2018	3400	3500	0.795	2327	-1125	1202
CH	RHONE	473	2018	3300	3400	0.9512	2606	-1365	1241
CH	RHONE	473	2018	3200	3300	1.4562	2571	-1666	905
CH	RHONE	473	2018	3100	3200	1.535	2535	-1970	565
CH	RHONE	473	2018	3000	3100	1.8588	2536	-2529	7
CH	RHONE	473	2018	2900	3000	2.0475	2540	-3219	-679
CH	RHONE	473	2018	2800	2900	2.1075	2450	-3739	-1289
CH	RHONE	473	2018	2700	2800	1.0619	1861	-4537	-2676
CH	RHONE	473	2018	2600	2700	0.7988	1235	-5156	-3921

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CH	RHONE	473	2018	2500	2600	0.9881	1130	-4861	-3731
CH	RHONE	473	2018	2400	2500	0.61	1147	-5013	-3866
CH	RHONE	473	2018	2300	2400	0.3875	895	-6406	-5511
CH	RHONE	473	2018	2200	2300	0.2619	1190	-6717	-5527
CH	RHONE	473	2019	3500	3600	0.3344	1338		629
CH	RHONE	473	2019	3400	3500	0.795	1790		1056
CH	RHONE	473	2019	3300	3400	0.9562	1972		996
CH	RHONE	473	2019	3200	3300	1.4625	2153		928
CH	RHONE	473	2019	3100	3200	1.5419	2234		678
CH	RHONE	473	2019	3000	3100	1.8644	2308		658
CH	RHONE	473	2019	2900	3000	2.1263	2301		283
CH	RHONE	473	2019	2800	2900	2.1037	2278		-526
CH	RHONE	473	2019	2700	2800	1.0469	1758		-2244
CH	RHONE	473	2019	2600	2700	0.8081	1243		-3845
CH	RHONE	473	2019	2500	2600	1.03	1119		-4602
CH	RHONE	473	2019	2400	2500	0.6081	1026		-5360
CH	RHONE	473	2019	2300	2400	0.3831	1097		-5682
CH	RHONE	473	2019	2200	2300	0.2456	1389		-5456
CH	SANKT ANNA	432	2018	2850	2900	0.0122	2423	-2495	-72
CH	SANKT ANNA	432	2018	2800	2850	0.0351	2310	-2735	-425
CH	SANKT ANNA	432	2018	2750	2800	0.0392	2056	-2932	-876
CH	SANKT ANNA	432	2018	2700	2750	0.0428	1752	-2957	-1205
CH	SANKT ANNA	432	2018	2650	2700	0.0217	1414	-4018	-2604
CH	SANKT ANNA	432	2018	2600	2650	0.0031	1436	-3968	-2532
CH	SANKT ANNA	432	2019	2850	2900	0.0122	2471		-64
CH	SANKT ANNA	432	2019	2800	2850	0.0343	2833		131
CH	SANKT ANNA	432	2019	2750	2800	0.0392	2595		-218
CH	SANKT ANNA	432	2019	2700	2750	0.0428	2365		-448
CH	SANKT ANNA	432	2019	2650	2700	0.0184	2054		-1368
CH	SANKT ANNA	432	2019	2600	2650	0.0008	2099		-2302
CH	SCHWARZBACH	4340	2018	2800	2850	0.0091	2808	-3956	-1148
CH	SCHWARZBACH	4340	2018	2750	2800	0.0152	2456	-4571	-2115
CH	SCHWARZBACH	4340	2018	2700	2750	0.0017	2301	-5356	-3055
CH	SCHWARZBACH	4340	2019	2800	2850	0.0091	2631		162
CH	SCHWARZBACH	4340	2019	2750	2800	0.0152	2509		-270
CH	SCHWARZBACH	4340	2019	2700	2750	0.0017	2345		-937
CH	SCHWARZBERG	395	2018	3500	3600	0.0575	1822	-568	1254
CH	SCHWARZBERG	395	2018	3400	3500	0.2294	2088	-681	1407
CH	SCHWARZBERG	395	2018	3300	3400	0.3675	2124	-1010	1114
CH	SCHWARZBERG	395	2018	3200	3300	0.6481	2077	-1458	619
CH	SCHWARZBERG	395	2018	3100	3200	0.7931	1963	-1989	-26
CH	SCHWARZBERG	395	2018	3000	3100	0.8544	1823	-2631	-808
CH	SCHWARZBERG	395	2018	2900	3000	1.1875	1651	-3427	-1776
CH	SCHWARZBERG	395	2018	2800	2900	0.6656	1414	-4146	-2732
CH	SCHWARZBERG	395	2018	2700	2800	0.29	1159	-5083	-3924
CH	SCHWARZBERG	395	2018	2600	2700	0.0088	1038	-5284	-4246
CH	SCHWARZBERG	395	2019	3500	3600	0.0575			1005
CH	SCHWARZBERG	395	2019	3400	3500	0.2294			1116
CH	SCHWARZBERG	395	2019	3300	3400	0.3675			878
CH	SCHWARZBERG	395	2019	3200	3300	0.6481			449
CH	SCHWARZBERG	395	2019	3100	3200	0.7881			-106
CH	SCHWARZBERG	395	2019	3000	3100	0.8375			-722
CH	SCHWARZBERG	395	2019	2900	3000	1.1069			-1530
CH	SCHWARZBERG	395	2019	2800	2900	0.6275			-2546
CH	SCHWARZBERG	395	2019	2700	2800	0.2275			-3274
CH	SCHWARZBERG	395	2019	2600	2700	0.0006			-3824
CH	SEX ROUGE	454	2018	2850	2900	0.011	2316	-2963	-647
CH	SEX ROUGE	454	2018	2800	2850	0.1606	2211	-3739	-1528
CH	SEX ROUGE	454	2018	2750	2800	0.0799	1883	-3925	-2042
CH	SEX ROUGE	454	2018	2700	2750	0.0044	2041	-4023	-1982
CH	SEX ROUGE	454	2019	2850	2900	0.011	2112		-883
CH	SEX ROUGE	454	2019	2800	2850	0.1606	1829		-1823
CH	SEX ROUGE	454	2019	2750	2800	0.0799	1756		-2151
CH	SEX ROUGE	454	2019	2700	2750	0.0044	1802		-2137
CH	SILVRETTA	408	2018	3000	3100	0.1088	1568	-2381	-813
CH	SILVRETTA	408	2018	2900	3000	0.575	1832	-2748	-916
CH	SILVRETTA	408	2018	2800	2900	0.5662	1834	-2685	-851
CH	SILVRETTA	408	2018	2700	2800	0.6206	1631	-2974	-1343
CH	SILVRETTA	408	2018	2600	2700	0.3962	1558	-3422	-1864
CH	SILVRETTA	408	2018	2500	2600	0.3275	1363	-4113	-2750
CH	SILVRETTA	408	2018	2400	2500	0.0213	1295	-4320	-3025
CH	SILVRETTA	408	2019	3000	3100	0.1125	1798		-780
CH	SILVRETTA	408	2019	2900	3000	0.565	2120		-796
CH	SILVRETTA	408	2019	2800	2900	0.5512	2229		-933
CH	SILVRETTA	408	2019	2700	2800	0.6169	2336		-1419
CH	SILVRETTA	408	2019	2600	2700	0.3944	2208		-1964
CH	SILVRETTA	408	2019	2500	2600	0.325	2109		-3086
CH	SILVRETTA	408	2019	2400	2500	0.0169	2008		-3447
CH	TSANFLEURON	371	2018	2900	3000	0.0569	2147	-3829	-1682
CH	TSANFLEURON	371	2018	2800	2900	0.8631	2531	-4644	-2113
CH	TSANFLEURON	371	2018	2700	2800	1.0969	2670	-5158	-2488
CH	TSANFLEURON	371	2018	2600	2700	0.4044	2541	-5837	-3296
CH	TSANFLEURON	371	2018	2500	2600	0.045	2478	-6178	-3700
CH	TSANFLEURON	371	2019	2900	3000	0.0569	1597		-1282
CH	TSANFLEURON	371	2019	2800	2900	0.8631	1955		-1342
CH	TSANFLEURON	371	2019	2700	2800	1.0969	2203		-1326
CH	TSANFLEURON	371	2019	2600	2700	0.4044	2067		-2169
CH	TSANFLEURON	371	2019	2500	2600	0.03	2071		-2358
CL - Chile									
CL	MOCHO CHOSHUENCO SE	3972	2018	2300	2400	0.056			408
CL	MOCHO CHOSHUENCO SE	3972	2018	2200	2300	0.158			532
CL	MOCHO CHOSHUENCO SE	3972	2018	2100	2200	0.347			657
CL	MOCHO CHOSHUENCO SE	3972	2018	2000	2100	1.221			805
CL	MOCHO CHOSHUENCO SE	3972	2018	1900	2000	2.045			-373
CL	MOCHO CHOSHUENCO SE	3972	2018	1800	1900	0.96			-1794

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CL	MOCHO CHOSHUENCO SE	3972	2018	1700	1800	0.241			-3215
CL	MOCHO CHOSHUENCO SE	3972	2018	1600	1700	0.032			-4637
CL	MOCHO CHOSHUENCO SE	3972	2019	2300	2400	0.056			203
CL	MOCHO CHOSHUENCO SE	3972	2019	2200	2300	0.158			262
CL	MOCHO CHOSHUENCO SE	3972	2019	2100	2200	0.347			320
CL	MOCHO CHOSHUENCO SE	3972	2019	2000	2100	1.221			390
CL	MOCHO CHOSHUENCO SE	3972	2019	1900	2000	2.045			-5
CL	MOCHO CHOSHUENCO SE	3972	2019	1800	1900	0.96			-493
CL	MOCHO CHOSHUENCO SE	3972	2019	1700	1800	0.241			-982
CL	MOCHO CHOSHUENCO SE	3972	2019	1600	1700	0.032			-1471
CN - China									
CN	PARLUNG NO. 94	3987	2018	5580	5635	0.009			77
CN	PARLUNG NO. 94	3987	2018	5540	5580	0.027			-226
CN	PARLUNG NO. 94	3987	2018	5500	5540	0.094			-532
CN	PARLUNG NO. 94	3987	2018	5460	5500	0.196			-840
CN	PARLUNG NO. 94	3987	2018	5420	5460	0.222			-1188
CN	PARLUNG NO. 94	3987	2018	5380	5420	0.341			-1512
CN	PARLUNG NO. 94	3987	2018	5340	5380	0.324			-1802
CN	PARLUNG NO. 94	3987	2018	5300	5340	0.408			-2145
CN	PARLUNG NO. 94	3987	2018	5260	5300	0.252			-2564
CN	PARLUNG NO. 94	3987	2018	5220	5260	0.21			-2883
CN	PARLUNG NO. 94	3987	2018	5180	5220	0.107			-3413
CN	PARLUNG NO. 94	3987	2018	5140	5180	0.118			-3733
CN	PARLUNG NO. 94	3987	2018	5100	5140	0.039			-3512
CN	PARLUNG NO. 94	3987	2018	5075	5100	0.01			-3700
CN	PARLUNG NO. 94	3987	2019	5580	5635	0.009			500
CN	PARLUNG NO. 94	3987	2019	5540	5580	0.027			500
CN	PARLUNG NO. 94	3987	2019	5500	5540	0.094			329
CN	PARLUNG NO. 94	3987	2019	5460	5500	0.196			-95
CN	PARLUNG NO. 94	3987	2019	5420	5460	0.222			-537
CN	PARLUNG NO. 94	3987	2019	5380	5420	0.341			-981
CN	PARLUNG NO. 94	3987	2019	5340	5380	0.324			-1389
CN	PARLUNG NO. 94	3987	2019	5300	5340	0.408			-1807
CN	PARLUNG NO. 94	3987	2019	5260	5300	0.252			-2280
CN	PARLUNG NO. 94	3987	2019	5220	5260	0.21			-2705
CN	PARLUNG NO. 94	3987	2019	5180	5220	0.107			-3100
CN	PARLUNG NO. 94	3987	2019	5140	5180	0.118			-3528
CN	PARLUNG NO. 94	3987	2019	5100	5140	0.039			-3997
CN	PARLUNG NO. 94	3987	2019	5075	5100	0.01			-4300
CN	URUMQI GLACIER NO. 1	853	2018	4450	4482	0.012	350	-219	131
CN	URUMQI GLACIER NO. 1	853	2018	4400	4450	0.023	350	-223	127
CN	URUMQI GLACIER NO. 1	853	2018	4350	4400	0.034	346	-242	104
CN	URUMQI GLACIER NO. 1	853	2018	4300	4350	0.038	334	-238	96
CN	URUMQI GLACIER NO. 1	853	2018	4250	4300	0.034	327	-261	66
CN	URUMQI GLACIER NO. 1	853	2018	4200	4250	0.083	214	-161	52
CN	URUMQI GLACIER NO. 1	853	2018	4150	4200	0.179	163	-194	-30
CN	URUMQI GLACIER NO. 1	853	2018	4100	4150	0.21	132	-401	-268
CN	URUMQI GLACIER NO. 1	853	2018	4050	4100	0.255	117	-685	-568
CN	URUMQI GLACIER NO. 1	853	2018	4000	4050	0.206	139	-923	-785
CN	URUMQI GLACIER NO. 1	853	2018	3950	4000	0.17	135	-1156	-1021
CN	URUMQI GLACIER NO. 1	853	2018	3900	3950	0.197	90	-1528	-1438
CN	URUMQI GLACIER NO. 1	853	2018	3850	3900	0.096	-25	-2003	-2028
CN	URUMQI GLACIER NO. 1	853	2018	3800	3850	0.051	-57	-2248	-2305
CN	URUMQI GLACIER NO. 1	853	2018	3787	3800	0.006	-49	-2194	-2243
CN	URUMQI GLACIER NO. 1	853	2019	4450	4482	0.008	326	596	922
CN	URUMQI GLACIER NO. 1	853	2019	4400	4450	0.022	322	554	876
CN	URUMQI GLACIER NO. 1	853	2019	4350	4400	0.037	317	531	848
CN	URUMQI GLACIER NO. 1	853	2019	4300	4350	0.037	313	468	781
CN	URUMQI GLACIER NO. 1	853	2019	4250	4300	0.035	308	382	690
CN	URUMQI GLACIER NO. 1	853	2019	4200	4250	0.083	322	235	557
CN	URUMQI GLACIER NO. 1	853	2019	4150	4200	0.143	314	148	462
CN	URUMQI GLACIER NO. 1	853	2019	4100	4150	0.142	290	29	319
CN	URUMQI GLACIER NO. 1	853	2019	4050	4100	0.183	233	-220	13
CN	URUMQI GLACIER NO. 1	853	2019	4000	4050	0.217	151	-415	-264
CN	URUMQI GLACIER NO. 1	853	2019	3950	4000	0.191	134	-581	-447
CN	URUMQI GLACIER NO. 1	853	2019	3900	3950	0.153	56	-724	-668
CN	URUMQI GLACIER NO. 1	853	2019	3850	3900	0.192	35	-1054	-1019
CN	URUMQI GLACIER NO. 1	853	2019	3800	3850	0.085	20	-1561	-1541
CN	URUMQI GLACIER NO. 1	853	2019	3787	3800	0.069	-170	-1767	-1937
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	4200	4250	0.043	122	-2	120
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	4150	4200	0.12	105	-93	12
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	4100	4150	0.117	74	-261	-187
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	4050	4100	0.151	77	-512	-435
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	4000	4050	0.136	140	-746	-606
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	3950	4000	0.131	158	-1027	-869
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	3900	3950	0.175	88	-1469	-1381
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	3850	3900	0.09	-32	-1996	-2028
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	3800	3850	0.052	-57	-2248	-2305
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2018	3787	3800	0.006	-49	-2194	-2243
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	4200	4250	0.05	335	198	533
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	4150	4200	0.103	321	141	462
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	4100	4150	0.093	295	59	354
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	4050	4100	0.095	249	-55	194
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	4000	4050	0.127	181	-230	-49
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	3950	4000	0.121	181	-332	-151
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	3900	3950	0.118	78	-488	-410
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	3850	3900	0.168	44	-971	-927
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	3800	3850	0.078	26	-1551	-1525
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	2019	3787	3800	0.069	-170	-1767	-1937
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4450	4482	0.012	350	-219	131
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4400	4450	0.023	350	-223	127
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4350	4400	0.034	346	-242	104
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4300	4350	0.038	334	-238	96
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4250	4300	0.034	327	-261	66
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4200	4250	0.039	315	-337	-22

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4150	4200	0.059	282	-398	-116
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4100	4150	0.093	206	-576	-370
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4050	4100	0.105	175	-932	-757
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	4000	4050	0.07	136	-1268	-1132
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	3950	4000	0.039	57	-1589	-1532
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	3900	3950	0.022	109	-1998	-1889
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2018	3883	3900	0.005	109	-2130	-2021
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4450	4482	0.008	326	596	922
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4400	4450	0.022	322	554	876
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4350	4400	0.037	317	531	848
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4300	4350	0.037	313	468	781
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4250	4300	0.035	308	382	690
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4200	4250	0.033	302	290	592
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4150	4200	0.04	296	166	462
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4100	4150	0.049	282	-29	253
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4050	4100	0.088	215	-398	-183
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	4000	4050	0.09	110	-675	-565
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	3950	4000	0.069	51	-1016	-965
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	3900	3950	0.034	-18	-1538	-1556
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	2019	3883	3900	0.024	-32	-1641	-1672
CO - Colombia									
CO	CONEJERAS	2721	2018	4795	4910	0.0112			-1309
CO	CONEJERAS	2721	2018	4735	4795	0.0692			-3450
CO	CONEJERAS	2721	2018	4680	4735	0.0402			-3930
CO	CONEJERAS	2721	2019	4785	4893	0.0091			-3544
CO	CONEJERAS	2721	2019	4725	4785	0.059			-4847
CO	CONEJERAS	2721	2019	4680	4725	0.037			-5553
CO	RITACUBA BLANCO	2763	2018	5120	5170	0.037			1487
CO	RITACUBA BLANCO	2763	2018	5080	5120	0.048			1466
CO	RITACUBA BLANCO	2763	2018	5020	5080	0.086			874
CO	RITACUBA BLANCO	2763	2018	4960	5020	0.085			221
CO	RITACUBA BLANCO	2763	2018	4920	4960	0.048			-118
CO	RITACUBA BLANCO	2763	2018	4820	4920	0.058			409
CO	RITACUBA BLANCO	2763	2019	5120	5170	0.037			1220
CO	RITACUBA BLANCO	2763	2019	5080	5120	0.048			1154
CO	RITACUBA BLANCO	2763	2019	5020	5080	0.086			1247
CO	RITACUBA BLANCO	2763	2019	4960	5020	0.085			221
CO	RITACUBA BLANCO	2763	2019	4920	4960	0.048			-595
CO	RITACUBA BLANCO	2763	2019	4820	4920	0.058			-1017
EC - Ecuador									
EC	ANTIZANA15ALPHA	1624	2018	5600	5760	0.0376			995
EC	ANTIZANA15ALPHA	1624	2018	5500	5600	0.0235			995
EC	ANTIZANA15ALPHA	1624	2018	5400	5500	0.0289			995
EC	ANTIZANA15ALPHA	1624	2018	5300	5400	0.0343			148
EC	ANTIZANA15ALPHA	1624	2018	5200	5300	0.0682			55
EC	ANTIZANA15ALPHA	1624	2018	5100	5200	0.0212			-996
EC	ANTIZANA15ALPHA	1624	2018	5000	5100	0.0191			-1273
EC	ANTIZANA15ALPHA	1624	2018	4960	5000	0.0197			-2202
EC	ANTIZANA15ALPHA	1624	2018	4910	4960	0.0207			-2491
EC	ANTIZANA15ALPHA	1624	2018	4880	4910	0.0115			-3092
EC	ANTIZANA15ALPHA	1624	2018	4860	4880	0.0004			-3642
EC	ANTIZANA15ALPHA	1624	2019	5600	5760	0.0376			1110
EC	ANTIZANA15ALPHA	1624	2019	5500	5600	0.0235			1110
EC	ANTIZANA15ALPHA	1624	2019	5400	5500	0.0289			1110
EC	ANTIZANA15ALPHA	1624	2019	5300	5400	0.0343			140
EC	ANTIZANA15ALPHA	1624	2019	5200	5300	0.0617			75
EC	ANTIZANA15ALPHA	1624	2019	5100	5200	0.0297			-2408
EC	ANTIZANA15ALPHA	1624	2019	5000	5100	0.0187			-4630
EC	ANTIZANA15ALPHA	1624	2019	4960	5000	0.0194			-4140
EC	ANTIZANA15ALPHA	1624	2019	4910	4960	0.0203			-5140
EC	ANTIZANA15ALPHA	1624	2019	4880	4910	0.0113			-5610
EC	ANTIZANA15ALPHA	1624	2019	4860	4880	0.0004			-6770
ES - Spain									
ES	MALADETA	942	2018	3188	3213	0.0054	2727	-232	2494
ES	MALADETA	942	2018	3163	3188	0.0184	2708	-798	1909
ES	MALADETA	942	2018	3138	3163	0.0315	2689	-1365	1324
ES	MALADETA	942	2018	3113	3138	0.033	2670	-1931	739
ES	MALADETA	942	2018	3088	3113	0.0344	2652	-2497	154
ES	MALADETA	942	2018	3063	3088	0.028	2633	-3063	-431
ES	MALADETA	942	2018	3038	3063	0.0233	2614	-3039	-425
ES	MALADETA	942	2018	3013	3038	0.0151	2595	-3310	-715
ES	MALADETA	942	2018	2988	3013	0.0085	2577	-3581	-1004
ES	MALADETA	942	2018	2963	2988	0.0063	2554	-3921	-1367
ES	MALADETA	942	2018	2938	2963	0.0049	2532	-4260	-1729
ES	MALADETA	942	2018	2913	2938	0.0032	2517	-3515	-998
ES	MALADETA	942	2018	2888	2913	0.0024	2498	-3312	-814
ES	MALADETA	942	2018	2863	2888	0.0012	2479	-3109	-630
ES	MALADETA	942	2018	2838	3213	0.216	2643	-2386	257
ES	MALADETA	942	2018	2838	2863	0.0004	2460	-2906	-446
ES	MALADETA	942	2019	3188	3213	0.0054	2666	-3792	-1127
ES	MALADETA	942	2019	3163	3188	0.0177	2372	-3615	-1243
ES	MALADETA	942	2019	3138	3163	0.0292	2079	-3437	-1358
ES	MALADETA	942	2019	3113	3138	0.0328	1785	-3260	-1474
ES	MALADETA	942	2019	3088	3113	0.0343	1492	-3082	-1590
ES	MALADETA	942	2019	3063	3088	0.0268	1199	-2905	-1706
ES	MALADETA	942	2019	3038	3063	0.0192	1504	-3088	-1584
ES	MALADETA	942	2019	3013	3038	0.0119	1510	-3091	-1581
ES	MALADETA	942	2019	2988	3013	0.008	1516	-3094	-1577
ES	MALADETA	942	2019	2963	2988	0.0056	1462	-3588	-2126
ES	MALADETA	942	2019	2938	2963	0.0047	1408	-4082	-2674
ES	MALADETA	942	2019	2913	2938	0.003	1682	-4356	-2674
ES	MALADETA	942	2019	2888	2913	0.0018	1793	-4740	-2948
ES	MALADETA	942	2019	2863	2888	0.0006	1903	-5125	-3222

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
ES	MALADETA	942	2019	2838	3213	0.201	1702	-3284	-1582
GL - Greenland									
GL	FREYA	3350	2018	1300	1400	0.0009	790		
GL	FREYA	3350	2018	1200	1300	0.1554	661		
GL	FREYA	3350	2018	1100	1200	0.1899	956		
GL	FREYA	3350	2018	1000	1100	0.2779	1452		
GL	FREYA	3350	2018	900	1000	0.633	1805		
GL	FREYA	3350	2018	800	900	0.8036	1736		
GL	FREYA	3350	2018	700	800	1.0643	1679		
GL	FREYA	3350	2018	600	700	1.0733	2102		
GL	FREYA	3350	2018	500	600	0.5859	1527		
GL	FREYA	3350	2018	400	500	0.3702	1250		
GL	FREYA	3350	2018	300	400	0.1361	1956		
GL	FREYA	3350	2018	200	300	0.0137	1655		
GL	FREYA	3350	2019	1300	1400	0.0009	263		
GL	FREYA	3350	2019	1200	1300	0.1554	287		
GL	FREYA	3350	2019	1100	1200	0.1899	323		
GL	FREYA	3350	2019	1000	1100	0.2779	350		
GL	FREYA	3350	2019	900	1000	0.633	352		
GL	FREYA	3350	2019	800	900	0.8036	367		
GL	FREYA	3350	2019	700	800	1.0643	338		
GL	FREYA	3350	2019	600	700	1.0733	305		
GL	FREYA	3350	2019	500	600	0.5859	238		
GL	FREYA	3350	2019	400	500	0.3702	211		
GL	FREYA	3350	2019	300	400	0.1361	114		
GL	FREYA	3350	2019	200	300	0.0137	-25		
GL	QASIGIANNGUIT	4566	2018	1000	1020	0.0267	1233	-1412	-179
GL	QASIGIANNGUIT	4566	2018	980	1000	0.0207	1233	-1412	-179
GL	QASIGIANNGUIT	4566	2018	960	980	0.0267	1233	-1412	-179
GL	QASIGIANNGUIT	4566	2018	940	960	0.0603	1233	-1412	-179
GL	QASIGIANNGUIT	4566	2018	920	940	0.0646	1233	-1363	-130
GL	QASIGIANNGUIT	4566	2018	900	920	0.0646	973	-1294	-322
GL	QASIGIANNGUIT	4566	2018	880	900	0.0888	1043	-1523	-480
GL	QASIGIANNGUIT	4566	2018	860	880	0.0457	1070	-1505	-434
GL	QASIGIANNGUIT	4566	2018	840	860	0.0284	1093	-1482	-389
GL	QASIGIANNGUIT	4566	2018	820	840	0.025	1115	-1459	-343
GL	QASIGIANNGUIT	4566	2018	800	820	0.0405	1138	-1436	-298
GL	QASIGIANNGUIT	4566	2018	780	800	0.0414	1160	-1412	-252
GL	QASIGIANNGUIT	4566	2018	760	780	0.0698	1183	-1389	-207
GL	QASIGIANNGUIT	4566	2018	740	760	0.062	1106	-1584	-479
GL	QASIGIANNGUIT	4566	2018	720	740	0.0371	1032	-1784	-752
GL	QASIGIANNGUIT	4566	2018	700	720	0.0112	1054	-1685	-631
GL	QASIGIANNGUIT	4566	2019	1000	1020	0.0267	1016	-2200	-1184
GL	QASIGIANNGUIT	4566	2019	980	1000	0.0207	1016	-2200	-1184
GL	QASIGIANNGUIT	4566	2019	960	980	0.0267	1016	-2200	-1184
GL	QASIGIANNGUIT	4566	2019	940	960	0.0603	1016	-2200	-1184
GL	QASIGIANNGUIT	4566	2019	920	940	0.0646	1016	-2470	-1454
GL	QASIGIANNGUIT	4566	2019	900	920	0.0646	1035	-2820	-1785
GL	QASIGIANNGUIT	4566	2019	880	900	0.0888	1012	-2972	-1960
GL	QASIGIANNGUIT	4566	2019	860	880	0.0457	1016	-2940	-1924
GL	QASIGIANNGUIT	4566	2019	840	860	0.0284	1023	-2911	-1888
GL	QASIGIANNGUIT	4566	2019	820	840	0.025	1029	-2882	-1853
GL	QASIGIANNGUIT	4566	2019	800	820	0.0405	1036	-2853	-1817
GL	QASIGIANNGUIT	4566	2019	780	800	0.0414	1042	-2824	-1781
GL	QASIGIANNGUIT	4566	2019	760	780	0.0698	1049	-2794	-1745
GL	QASIGIANNGUIT	4566	2019	740	760	0.062	954	-3149	-2195
GL	QASIGIANNGUIT	4566	2019	720	740	0.0371	893	-3572	-2680
GL	QASIGIANNGUIT	4566	2019	700	720	0.0112	988	-3609	-2621
IT - Italy									
IT	CARESER	635	2018	3250	3300	0.005	860	-2672	-1812
IT	CARESER	635	2018	3200	3250	0.019	747	-2507	-1760
IT	CARESER	635	2018	3150	3200	0.038	763	-2482	-1719
IT	CARESER	635	2018	3100	3150	0.133	937	-2610	-1673
IT	CARESER	635	2018	3050	3100	0.565	909	-2803	-1894
IT	CARESER	635	2018	3000	3050	0.157	743	-3058	-2315
IT	CARESER	635	2018	2950	3000	0.048	669	-3741	-3072
IT	CARESER	635	2018	2900	2950	0	642	-4150	-3508
IT	CARESER	635	2019	3250	3300	0.003	1870	-1969	-99
IT	CARESER	635	2019	3200	3250	0.019	1881	-2312	-431
IT	CARESER	635	2019	3150	3200	0.028	1282	-1900	-618
IT	CARESER	635	2019	3100	3150	0.104	1434	-2511	-1077
IT	CARESER	635	2019	3050	3100	0.531	1234	-2618	-1385
IT	CARESER	635	2019	3000	3050	0.199	1268	-2870	-1602
IT	CARESER	635	2019	2950	3000	0.058	1401	-3745	-2343
IT	CARESER	635	2019	2900	2950	0.013	1468	-4443	-2975
IT	CIARDONEY	1264	2018	3120	3160	0.055	2999	-3347	-348
IT	CIARDONEY	1264	2018	3080	3120	0.168	2086	-3287	-1201
IT	CIARDONEY	1264	2018	3020	3080	0.154	1857	-3419	-1562
IT	CIARDONEY	1264	2018	2910	3020	0.09	1630	-3205	-1575
IT	CIARDONEY	1264	2018	2850	2910	0.101	1826	-4001	-2175
IT	CIARDONEY	1264	2019	3120	3160	0.055	2890	-3743	-853
IT	CIARDONEY	1264	2019	3080	3120	0.168	1514	-2880	-1366
IT	CIARDONEY	1264	2019	3020	3080	0.154	1629	-3199	-1570
IT	CIARDONEY	1264	2019	2910	3020	0.09	1761	-3779	-2018
IT	CIARDONEY	1264	2019	2850	2910	0.101	1846	-4195	-2349
IT	LA MARE (VEDRETTA DE)	636	2018	3550	3600	0.007			22
IT	LA MARE (VEDRETTA DE)	636	2018	3500	3550	0.062			-307
IT	LA MARE (VEDRETTA DE)	636	2018	3450	3500	0.109			-305
IT	LA MARE (VEDRETTA DE)	636	2018	3400	3450	0.118			-331
IT	LA MARE (VEDRETTA DE)	636	2018	3350	3400	0.12			-377
IT	LA MARE (VEDRETTA DE)	636	2018	3300	3350	0.159			-345
IT	LA MARE (VEDRETTA DE)	636	2018	3250	3300	0.195			-565
IT	LA MARE (VEDRETTA DE)	636	2018	3200	3250	0.332			-956
IT	LA MARE (VEDRETTA DE)	636	2018	3150	3200	0.331			-1537

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
IT	LA MARE (VEDRETTA DE)	636	2018	3100	3150	0.167			-1960
IT	LA MARE (VEDRETTA DE)	636	2018	3050	3100	0.104			-2281
IT	LA MARE (VEDRETTA DE)	636	2018	3000	3050	0.082			-2540
IT	LA MARE (VEDRETTA DE)	636	2018	2950	3000	0.06			-2850
IT	LA MARE (VEDRETTA DE)	636	2018	2900	2950	0.039			-3208
IT	LA MARE (VEDRETTA DE)	636	2018	2850	2900	0.009			-3008
IT	LA MARE (VEDRETTA DE)	636	2018	2800	2850	0.008			-3189
IT	LA MARE (VEDRETTA DE)	636	2018	2750	2800	0.002			-3487
IT	LA MARE (VEDRETTA DE)	636	2019	3550	3600	0.007			-402
IT	LA MARE (VEDRETTA DE)	636	2019	3500	3550	0.062			-516
IT	LA MARE (VEDRETTA DE)	636	2019	3450	3500	0.109			-599
IT	LA MARE (VEDRETTA DE)	636	2019	3400	3450	0.118			-510
IT	LA MARE (VEDRETTA DE)	636	2019	3350	3400	0.12			-457
IT	LA MARE (VEDRETTA DE)	636	2019	3300	3350	0.159			-480
IT	LA MARE (VEDRETTA DE)	636	2019	3250	3300	0.195			-569
IT	LA MARE (VEDRETTA DE)	636	2019	3200	3250	0.332			-817
IT	LA MARE (VEDRETTA DE)	636	2019	3150	3200	0.331			-1234
IT	LA MARE (VEDRETTA DE)	636	2019	3100	3150	0.167			-1704
IT	LA MARE (VEDRETTA DE)	636	2019	3050	3100	0.104			-2243
IT	LA MARE (VEDRETTA DE)	636	2019	3000	3050	0.082			-2096
IT	LA MARE (VEDRETTA DE)	636	2019	2950	3000	0.06			-2034
IT	LA MARE (VEDRETTA DE)	636	2019	2900	2950	0.039			-2163
IT	LA MARE (VEDRETTA DE)	636	2019	2850	2900	0.009			-1430
IT	LA MARE (VEDRETTA DE)	636	2019	2800	2850	0.008			-1144
IT	LA MARE (VEDRETTA DE)	636	2019	2750	2800	0.002			-985
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3400	3470	0.081	997	-997	0
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3350	3400	0.14	1502	-1552	-50
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3300	3350	0.162	997	-1677	-680
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3250	3300	0.13	939	-1766	-827
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3200	3250	0.251	1379	-2174	-795
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3150	3200	0.612	1443	-2441	-998
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3100	3150	0.568	1495	-3428	-1933
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3050	3100	0.567	1401	-2910	-1509
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	3000	3050	0.608	1236	-2998	-1762
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2950	3000	0.579	1109	-3338	-2229
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2900	2950	0.429	1050	-3074	-2024
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2850	2900	0.765	1098	-3199	-2101
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2800	2850	0.429	1038	-3148	-2110
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2750	2800	0.327	978	-3558	-2580
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2700	2750	0.145	912	-3597	-2685
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2650	2700	0.205	469	-3924	-3455
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2018	2560	2650	0.029	220	-3950	-3730
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3400	3470	0.061	1529	-1800	-271
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3350	3400	0.082	1614	-1900	-286
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3300	3350	0.138	1642	-1950	-308
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3250	3300	0.179	1572	-1572	0
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3200	3250	0.238	1443	-1450	-7
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3150	3200	0.426	1494	-1950	-456
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3100	3150	0.662	1460	-2442	-982
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3050	3100	0.469	1830	-2400	-570
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	3000	3050	0.662	1804	-2531	-727
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2950	3000	0.454	1623	-3020	-1397
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2900	2950	0.535	1483	-2648	-1165
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2850	2900	0.696	1635	-2580	-945
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2800	2850	0.484	1707	-2667	-960
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2750	2800	0.344	1586	-2891	-1305
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2700	2750	0.217	1385	-2910	-1525
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2650	2700	0.199	1066	-3731	-2665
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	2019	2560	2650	0.075	924	-3984	-3060
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2900	2950	0.054	1547	-3317	-413
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2850	2900	0.167	1682	-3652	-302
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2800	2850	0.137	1634	-3511	-1111
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2750	2800	0.188	1142	-3642	-1476
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2700	2750	0.212	1136	-3486	-1615
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2650	2700	0.088	928	-3544	-1791
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2018	2625	2650	0.006	634	-3574	-1996
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2900	2950	0.035	2200	-2500	-300
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2850	2900	0.105	2116	-2602	-486
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2800	2850	0.135	2075	-2600	-525
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2750	2800	0.143	1754	-2970	-1216
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2700	2750	0.163	1646	-2620	-974
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2650	2700	0.159	1622	-3390	-1768
IT	PENDENTE (VEDR.) / HANGENDERF.	675	2019	2625	2650	0.032	1493	-3450	-1957
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	3200	3250	0.013	1397	-1997	-600
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	3150	3200	0.175	1312	-2017	-705
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	3100	3150	0.215	1220	-2232	-1012
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	3050	3100	0.256	1240	-2233	-993
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	3000	3050	0.263	1219	-2320	-1101
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	2950	3000	0.236	1188	-2619	-1431
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	2900	2950	0.204	1213	-3160	-1946
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	2850	2900	0.128	1141	-3439	-2298
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	2800	2850	0.079	947	-3574	-2626
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2018	2750	2800	0.007	800	-3900	-3100
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	3200	3250	0.008	1221	-1853	-633
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	3150	3200	0.163	1125	-1834	-708
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	3100	3150	0.21	1068	-1775	-707
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	3050	3100	0.246	1058	-1981	-923
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	3000	3050	0.259	940	-1917	-977
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	2950	3000	0.226	931	-2188	-1257
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	2900	2950	0.211	989	-2412	-1423
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	2850	2900	0.126	957	-2561	-1604
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	2800	2850	0.101	907	-2836	-1929
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	2019	2750	2800	0.024	899	-3598	-2700
KG - Kyrgyzstan									
KG	ABRAMOV	732	2018	4800	4900	0.0908	1607	-162	1445

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
KG	ABRAMOV	732	2018	4700	4800	0.1254	1806	-300	1506
KG	ABRAMOV	732	2018	4600	4700	0.2486	1953	-476	1477
KG	ABRAMOV	732	2018	4500	4600	0.9987	2174	-816	1358
KG	ABRAMOV	732	2018	4400	4500	2.3498	2603	-1095	1508
KG	ABRAMOV	732	2018	4300	4400	4.4424	2568	-1366	1202
KG	ABRAMOV	732	2018	4200	4300	5.3244	2387	-1625	762
KG	ABRAMOV	732	2018	4100	4200	4.4553	2044	-2021	23
KG	ABRAMOV	732	2018	4000	4100	2.6589	1568	-2781	-1213
KG	ABRAMOV	732	2018	3900	4000	1.6537	951	-3394	-2443
KG	ABRAMOV	732	2018	3800	3900	0.9814	363	-4138	-3775
KG	ABRAMOV	732	2018	3700	3800	0.4929	25	-4654	-4629
KG	ABRAMOV	732	2018	3600	3700	0.1081	-111	-4780	-4891
KG	ABRAMOV	732	2019	4800	4900	0.0908	827		567
KG	ABRAMOV	732	2019	4700	4800	0.1254	943		573
KG	ABRAMOV	732	2019	4600	4700	0.2486	1055		533
KG	ABRAMOV	732	2019	4500	4600	0.9987	1258		443
KG	ABRAMOV	732	2019	4400	4500	2.3498	1601		530
KG	ABRAMOV	732	2019	4300	4400	4.4424	1678		342
KG	ABRAMOV	732	2019	4200	4300	5.3244	1649		-11
KG	ABRAMOV	732	2019	4100	4200	4.4553	1482		-873
KG	ABRAMOV	732	2019	4000	4100	2.6589	1230		-1764
KG	ABRAMOV	732	2019	3900	4000	1.6537	881		-2619
KG	ABRAMOV	732	2019	3800	3900	0.9814	538		-3654
KG	ABRAMOV	732	2019	3700	3800	0.4929	354		-4460
KG	ABRAMOV	732	2019	3600	3700	0.1081	283		-4833
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2018	4400	4500	0.2016	380	-408	-28
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2018	4300	4400	0.3272	363	-811	-448
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2018	4200	4300	0.2992	331	-1311	-980
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2018	4100	4200	0.1672	282	-1895	-1613
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2018	4000	4100	0.0192	242	-2295	-2053
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2019	4400	4500	0.08	1374	251	1625
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2019	4300	4400	0.2	1362	-416	946
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2019	4200	4300	0.33	1346	-1739	-393
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2019	4100	4200	0.3	1317	-3151	-1834
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2019	4000	4100	0.17	1242	-4773	-3531
KG	BATYSH SOOK/SYEK ZAPADNIY	781	2019	3900	4000	0.04	1119	-6109	-4990
KG	BORDU	829	2018	4500	4730	0.34	610	-510	100
KG	BORDU	829	2018	4400	4500	0.462	550	-520	30
KG	BORDU	829	2018	4300	4400	0.934	320	-1030	-710
KG	BORDU	829	2018	4200	4300	0.996	320	-990	-670
KG	BORDU	829	2018	4100	4200	1.084	260	-1320	-1100
KG	BORDU	829	2018	4000	4100	0.804	200	-1530	-1330
KG	BORDU	829	2018	3880	4000	0.294	100	-2520	-2420
KG	BORDU	829	2019	4500	4730	0.34	630	-520	110
KG	BORDU	829	2019	4400	4500	0.462	590	-540	50
KG	BORDU	829	2019	4300	4400	0.934	340	-1090	-760
KG	BORDU	829	2019	4200	4300	0.996	340	-1210	-870
KG	BORDU	829	2019	4100	4200	1.084	240	-1410	-1170
KG	BORDU	829	2019	4000	4100	0.804	210	-1760	-1550
KG	BORDU	829	2019	3880	4000	0.294	140	-2450	-2310
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4600	4700	0.0668	359	125	484
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4500	4600	0.1724	367	76	443
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4400	4500	0.4712	386	-7	379
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4300	4400	0.9476	358	-182	176
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4200	4300	1.608	287	-385	-98
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4100	4200	1.6248	163	-783	-620
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	4000	4100	0.8384	59	-1387	-1328
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	3900	4000	0.5428	-26	-1925	-1951
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2018	3800	3900	0.1108	-40	-2219	-2259
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4600	4700	0.0668	160	434	594
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4500	4600	0.1724	164	378	542
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4400	4500	0.4712	174	264	438
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4300	4400	0.9476	163	-37	126
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4200	4300	1.608	132	-566	-434
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4100	4200	1.6248	79	-1339	-1260
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	4000	4100	0.8384	36	-2074	-2038
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	3900	4000	0.5428	1	-2750	-2749
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	2019	3800	3900	0.1108	-6	-3230	-3236
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2018	4200	4300	0.075			1243
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2018	4100	4200	0.178			519
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2018	4000	4100	0.299			205
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2018	3900	4000	0.619			-455
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2018	3800	3900	0.237			-1368
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2018	3700	3800	0.024			-1646
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2019	4200	4300	0.075			864
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2019	4100	4200	0.178			249
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2019	4000	4100	0.299			71
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2019	3900	4000	0.619			-474
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2019	3800	3900	0.237			-1744
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	2019	3700	3800	0.024			-1845
KG	GOLUBIN	753	2018	4300	4350	0.0196	1096	-624	472
KG	GOLUBIN	753	2018	4200	4300	0.2668	1258	-615	643
KG	GOLUBIN	753	2018	4100	4200	0.5536	1285	-571	714
KG	GOLUBIN	753	2018	4000	4100	1.0892	1443	-650	793
KG	GOLUBIN	753	2018	3900	4000	1.0884	1193	-711	482
KG	GOLUBIN	753	2018	3800	3900	0.92	1116	-767	349
KG	GOLUBIN	753	2018	3700	3800	0.3416	803	-901	-98
KG	GOLUBIN	753	2018	3600	3700	0.5552	330	-1710	-1380
KG	GOLUBIN	753	2018	3500	3600	0.3628	-91	-2092	-2183
KG	GOLUBIN	753	2018	3400	3500	0.2384	-1315	-2452	-3767
KG	GOLUBIN	753	2018	3325	3400	0.018	-1392	-2633	-4025
KG	GOLUBIN	753	2019	4300	4350	0.0116	1272	-582	690
KG	GOLUBIN	753	2019	4200	4300	0.2756	1581	-578	1003
KG	GOLUBIN	753	2019	4100	4200	0.5368	1524	-591	933
KG	GOLUBIN	753	2019	4000	4100	1.084	1618	-679	939
KG	GOLUBIN	753	2019	3900	4000	1.0632	1337	-767	570

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
KG	GOLUBIN	753	2019	3800	3900	0.9632	1188	-845	343
KG	GOLUBIN	753	2019	3700	3800	0.3028	802	-1063	-261
KG	GOLUBIN	753	2019	3600	3700	0.5932	313	-2063	-1750
KG	GOLUBIN	753	2019	3500	3600	0.3604	-193	-2578	-2771
KG	GOLUBIN	753	2019	3400	3500	0.2236	-1249	-2871	-4120
KG	GOLUBIN	753	2019	3325	3400	0.0292	-1256	-3063	-4319
KG	KARA-BATKAK	813	2018	4200	4770	0.452	340	-10	330
KG	KARA-BATKAK	813	2018	4100	4200	0.315	790	-60	730
KG	KARA-BATKAK	813	2018	4000	4100	0.246	510	0	510
KG	KARA-BATKAK	813	2018	3900	4000	0.3	320	-1590	-1270
KG	KARA-BATKAK	813	2018	3800	3900	0.382	420	-1600	-1180
KG	KARA-BATKAK	813	2018	3700	3800	0.241	510	-2170	-1660
KG	KARA-BATKAK	813	2018	3600	3700	0.147	600	-2300	-1700
KG	KARA-BATKAK	813	2018	3500	3600	0.077	560	-2430	-1870
KG	KARA-BATKAK	813	2018	3400	3500	0.273	350	-3100	-2750
KG	KARA-BATKAK	813	2018	3360	3400	0.034	310	-3630	-3320
KG	KARA-BATKAK	813	2019	4200	4770	0.452	460	0	460
KG	KARA-BATKAK	813	2019	4100	4200	0.315	1040	-170	870
KG	KARA-BATKAK	813	2019	4000	4100	0.246	830	-240	590
KG	KARA-BATKAK	813	2019	3900	4000	0.3	520	-1330	-810
KG	KARA-BATKAK	813	2019	3800	3900	0.382	720	-1770	-1050
KG	KARA-BATKAK	813	2019	3700	3800	0.241	800	-1860	-1060
KG	KARA-BATKAK	813	2019	3600	3700	0.147	770	-2090	-1320
KG	KARA-BATKAK	813	2019	3500	3600	0.077	560	-2400	-1840
KG	KARA-BATKAK	813	2019	3400	3500	0.273	440	-2700	-2260
KG	KARA-BATKAK	813	2019	3360	3400	0.034	360	-3030	-2670
KG	SARY TOR (NO.356)	805	2018	4500	4760	0.303	520	-330	190
KG	SARY TOR (NO.356)	805	2018	4400	4500	0.292	500	-330	170
KG	SARY TOR (NO.356)	805	2018	4300	4400	0.673	330	-390	-60
KG	SARY TOR (NO.356)	805	2018	4200	4300	0.49	320	-970	-650
KG	SARY TOR (NO.356)	805	2018	4100	4200	0.46	260	-1190	-930
KG	SARY TOR (NO.356)	805	2018	4000	4100	0.346	160	-1790	-1630
KG	SARY TOR (NO.356)	805	2018	3930	4000	0.08	120	-2470	-2350
KG	SARY TOR (NO.356)	805	2019	4500	4760	0.303	440	-590	-150
KG	SARY TOR (NO.356)	805	2019	4400	4500	0.292	430	-620	-190
KG	SARY TOR (NO.356)	805	2019	4300	4400	0.673	260	-800	-540
KG	SARY TOR (NO.356)	805	2019	4200	4300	0.49	260	-1220	-960
KG	SARY TOR (NO.356)	805	2019	4100	4200	0.46	250	-1440	-1190
KG	SARY TOR (NO.356)	805	2019	4000	4100	0.346	200	-1820	-1620
KG	SARY TOR (NO.356)	805	2019	3930	4000	0.08	190	-2890	-2700
KG	TURGEN-AKSUU	13057	2019	4500	4550	0.0074			990
KG	TURGEN-AKSUU	13057	2019	4450	4500	0.0449			980
KG	TURGEN-AKSUU	13057	2019	4400	4450	0.0097			920
KG	TURGEN-AKSUU	13057	2019	4350	4400	0.1561			730
KG	TURGEN-AKSUU	13057	2019	4300	4350	0.216			570
KG	TURGEN-AKSUU	13057	2019	4250	4300	0.2678			640
KG	TURGEN-AKSUU	13057	2019	4200	4250	0.3975			500
KG	TURGEN-AKSUU	13057	2019	4150	4200	0.3667			440
KG	TURGEN-AKSUU	13057	2019	4100	4150	0.3917			280
KG	TURGEN-AKSUU	13057	2019	4050	4100	0.463			10
KG	TURGEN-AKSUU	13057	2019	4000	4050	0.6372			-170
KG	TURGEN-AKSUU	13057	2019	3950	4000	0.5331			-690
KG	TURGEN-AKSUU	13057	2019	3900	3950	0.376			-1120
KG	TURGEN-AKSUU	13057	2019	3850	3900	0.471			-1590
KG	TURGEN-AKSUU	13057	2019	3800	3850	0.3634			-2330
KG	TURGEN-AKSUU	13057	2019	3750	3800	0.2225			-2800
KG	TURGEN-AKSUU	13057	2019	3700	3750	0.1682			-3520
KG	TURGEN-AKSUU	13057	2019	3650	3700	0.0363			-3930
KZ - Kazakhstan									
KZ	TS.TUYUKSUYSKIY	817	2018	4100	4200	0.161	248	351	598
KZ	TS.TUYUKSUYSKIY	817	2018	4000	4100	0.314	458	187	645
KZ	TS.TUYUKSUYSKIY	817	2018	3900	4000	0.233	576	272	848
KZ	TS.TUYUKSUYSKIY	817	2018	3800	3900	0.312	687	-165	523
KZ	TS.TUYUKSUYSKIY	817	2018	3750	3800	0.31	663	-666	-4
KZ	TS.TUYUKSUYSKIY	817	2018	3700	3750	0.386	584	-1167	-583
KZ	TS.TUYUKSUYSKIY	817	2018	3650	3700	0.236	579	-1446	-867
KZ	TS.TUYUKSUYSKIY	817	2018	3600	3650	0.107	386	-1450	-1064
KZ	TS.TUYUKSUYSKIY	817	2018	3550	3600	0.117	587	-1922	-1336
KZ	TS.TUYUKSUYSKIY	817	2018	3500	3550	0.071	563	-2354	-1791
KZ	TS.TUYUKSUYSKIY	817	2019	4100	4200	0.166	236	174	410
KZ	TS.TUYUKSUYSKIY	817	2019	4000	4100	0.3168	437	-17	420
KZ	TS.TUYUKSUYSKIY	817	2019	3900	4000	0.2374	549	37	586
KZ	TS.TUYUKSUYSKIY	817	2019	3800	3900	0.3112	655	-825	-170
KZ	TS.TUYUKSUYSKIY	817	2019	3750	3800	0.2981	613	-1588	-976
KZ	TS.TUYUKSUYSKIY	817	2019	3700	3750	0.3675	572	-1794	-1223
KZ	TS.TUYUKSUYSKIY	817	2019	3650	3700	0.2383	559	-1963	-1404
KZ	TS.TUYUKSUYSKIY	817	2019	3600	3650	0.1069	547	-1996	-1449
KZ	TS.TUYUKSUYSKIY	817	2019	3550	3600	0.1062	523	-2218	-1695
KZ	TS.TUYUKSUYSKIY	817	2019	3500	3550	0.0864	538	-2542	-2004
NO - Norway									
NO	AALFOTBREEN	317	2018	1300	1368	0.902	3025	-4450	-1425
NO	AALFOTBREEN	317	2018	1250	1300	0.782	3050	-4625	-1575
NO	AALFOTBREEN	317	2018	1200	1250	0.699	2925	-4825	-1900
NO	AALFOTBREEN	317	2018	1150	1200	0.577	2800	-5025	-2225
NO	AALFOTBREEN	317	2018	1100	1150	0.448	2725	-5225	-2500
NO	AALFOTBREEN	317	2018	1050	1100	0.295	2525	-5425	-2900
NO	AALFOTBREEN	317	2018	1000	1050	0.183	2150	-5625	-3475
NO	AALFOTBREEN	317	2018	950	1000	0.075	1925	-5825	-3900
NO	AALFOTBREEN	317	2018	890	950	0.014	1750	-6025	-4275
NO	AALFOTBREEN	317	2019	1300	1368	0.902	2700	-4050	-1350
NO	AALFOTBREEN	317	2019	1250	1300	0.782	2650	-4475	-1825
NO	AALFOTBREEN	317	2019	1200	1250	0.699	2525	-4825	-2300
NO	AALFOTBREEN	317	2019	1150	1200	0.577	2325	-5125	-2800
NO	AALFOTBREEN	317	2019	1100	1150	0.448	2100	-5400	-3300

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
NO	AALFOTBREEN	317	2019	1050	1100	0.295	1800	-5625	-3825
NO	AALFOTBREEN	317	2019	1000	1050	0.183	1525	-5850	-4325
NO	AALFOTBREEN	317	2019	950	1000	0.075	1275	-6050	-4775
NO	AALFOTBREEN	317	2019	890	950	0.014	1000	-6250	-5250
NO	AUSTDALSBREEN	321	2018	1700	1747	0.126	1000	-2300	-1300
NO	AUSTDALSBREEN	321	2018	1650	1700	0.139	1500	-2400	-900
NO	AUSTDALSBREEN	321	2018	1600	1650	0.182	1900	-2450	-550
NO	AUSTDALSBREEN	321	2018	1550	1600	1.892	2200	-2500	-300
NO	AUSTDALSBREEN	321	2018	1500	1550	2.792	2150	-2600	-450
NO	AUSTDALSBREEN	321	2018	1450	1500	1.604	2050	-2750	-700
NO	AUSTDALSBREEN	321	2018	1400	1450	1.378	1950	-3000	-1050
NO	AUSTDALSBREEN	321	2018	1350	1400	0.931	1650	-3800	-2150
NO	AUSTDALSBREEN	321	2018	1300	1350	0.821	1400	-4400	-3000
NO	AUSTDALSBREEN	321	2018	1250	1300	0.536	1100	-4900	-3800
NO	AUSTDALSBREEN	321	2018	1200	1250	0.228	900	-5400	-4500
NO	AUSTDALSBREEN	321	2019	1700	1740	0.09	1300	-2250	-950
NO	AUSTDALSBREEN	321	2019	1650	1700	0.119	1500	-2200	-700
NO	AUSTDALSBREEN	321	2019	1600	1650	0.172	1700	-2150	-450
NO	AUSTDALSBREEN	321	2019	1550	1600	1.584	1850	-2100	-250
NO	AUSTDALSBREEN	321	2019	1500	1550	2.748	1850	-2050	-200
NO	AUSTDALSBREEN	321	2019	1450	1500	1.503	1700	-2150	-450
NO	AUSTDALSBREEN	321	2019	1400	1450	1.594	1600	-2750	-1150
NO	AUSTDALSBREEN	321	2019	1350	1400	0.952	1300	-3500	-2200
NO	AUSTDALSBREEN	321	2019	1300	1350	0.721	900	-3900	-3000
NO	AUSTDALSBREEN	321	2019	1250	1300	0.457	850	-4250	-3400
NO	AUSTDALSBREEN	321	2019	1200	1250	0.182	850	-4600	-3750
NO	ENGABREEN	298	2018	1500	1544	0.048	1900	-2200	-300
NO	ENGABREEN	298	2018	1400	1500	2.129	2150	-2200	-50
NO	ENGABREEN	298	2018	1300	1400	9.241	2100	-2300	-200
NO	ENGABREEN	298	2018	1200	1300	8.044	1950	-2650	-700
NO	ENGABREEN	298	2018	1100	1200	7.572	1750	-3500	-1750
NO	ENGABREEN	298	2018	1000	1100	4.607	1500	-4500	-3000
NO	ENGABREEN	298	2018	900	1000	2.431	1100	-5400	-4300
NO	ENGABREEN	298	2018	800	900	0.797	800	-6000	-5200
NO	ENGABREEN	298	2018	700	800	0.455	550	-6400	-5850
NO	ENGABREEN	298	2018	600	700	0.285	300	-6800	-6500
NO	ENGABREEN	298	2018	500	600	0.245	0	-7200	-7200
NO	ENGABREEN	298	2018	400	500	0.144	-300	-7700	-8000
NO	ENGABREEN	298	2018	300	400	0.099	-600	-8200	-8800
NO	ENGABREEN	298	2018	200	300	0.117	-900	-8700	-9600
NO	ENGABREEN	298	2018	111	200	0.035	-1200	-9200	-10400
NO	ENGABREEN	298	2019	1500	1544	0.048	4000	-1900	2100
NO	ENGABREEN	298	2019	1400	1500	2.129	4700	-1900	2800
NO	ENGABREEN	298	2019	1300	1400	9.241	4500	-2000	2500
NO	ENGABREEN	298	2019	1200	1300	8.044	3700	-2100	1600
NO	ENGABREEN	298	2019	1100	1200	7.572	3000	-2500	500
NO	ENGABREEN	298	2019	1000	1100	4.607	2850	-3200	-350
NO	ENGABREEN	298	2019	900	1000	2.431	2300	-4500	-2200
NO	ENGABREEN	298	2019	800	900	0.797	1800	-4900	-3100
NO	ENGABREEN	298	2019	700	800	0.455	1300	-5300	-4000
NO	ENGABREEN	298	2019	600	700	0.285	800	-5650	-4850
NO	ENGABREEN	298	2019	500	600	0.245	300	-6000	-5700
NO	ENGABREEN	298	2019	400	500	0.144	-300	-6600	-6900
NO	ENGABREEN	298	2019	300	400	0.099	-900	-7200	-8100
NO	ENGABREEN	298	2019	200	300	0.117	-1400	-7800	-9200
NO	ENGABREEN	298	2019	111	200	0.035	-1800	-8400	-10200
NO	GRAASUBREEN	299	2018	2250	2283	0.031	600	-1800	-1200
NO	GRAASUBREEN	299	2018	2200	2250	0.153	400	-1900	-1500
NO	GRAASUBREEN	299	2018	2150	2200	0.255	609	-2200	-1591
NO	GRAASUBREEN	299	2018	2100	2150	0.353	240	-2400	-2160
NO	GRAASUBREEN	299	2018	2050	2100	0.362	277	-2600	-2323
NO	GRAASUBREEN	299	2018	2000	2050	0.405	307	-2200	-1893
NO	GRAASUBREEN	299	2018	1950	2000	0.32	448	-2000	-1552
NO	GRAASUBREEN	299	2018	1900	1950	0.127	497	-1850	-1353
NO	GRAASUBREEN	299	2018	1833	1900	0.113	622	-1900	-1278
NO	GRAASUBREEN	299	2019	2250	2277	0.02	394	-1100	-706
NO	GRAASUBREEN	299	2019	2200	2250	0.12	90	-1300	-1210
NO	GRAASUBREEN	299	2019	2150	2200	0.221	342	-1700	-1358
NO	GRAASUBREEN	299	2019	2100	2150	0.32	210	-2000	-1790
NO	GRAASUBREEN	299	2019	2050	2100	0.309	149	-2150	-2001
NO	GRAASUBREEN	299	2019	2000	2050	0.342	286	-2200	-1914
NO	GRAASUBREEN	299	2019	1950	2000	0.272	246	-2050	-1804
NO	GRAASUBREEN	299	2019	1900	1950	0.087	535	-1900	-1365
NO	GRAASUBREEN	299	2019	1854	1900	0.053	1097	-1700	-603
NO	HANSEBREEN	322	2018	1250	1310	0.496	2800	-4775	-1975
NO	HANSEBREEN	322	2018	1200	1250	0.418	3025	-5100	-2075
NO	HANSEBREEN	322	2018	1150	1200	0.474	2925	-5300	-2375
NO	HANSEBREEN	322	2018	1100	1150	0.543	2575	-5450	-2875
NO	HANSEBREEN	322	2018	1050	1100	0.495	2175	-5575	-3400
NO	HANSEBREEN	322	2018	1000	1050	0.206	2200	-5650	-3450
NO	HANSEBREEN	322	2018	950	1000	0.098	2575	-5700	-3125
NO	HANSEBREEN	322	2018	927	950	0.02	2900	-5725	-2825
NO	HANSEBREEN	322	2019	1250	1310	0.496	2425	-4425	-2000
NO	HANSEBREEN	322	2019	1200	1250	0.418	2400	-4800	-2400
NO	HANSEBREEN	322	2019	1150	1200	0.474	2325	-5050	-2725
NO	HANSEBREEN	322	2019	1100	1150	0.543	2050	-5225	-3175
NO	HANSEBREEN	322	2019	1050	1100	0.495	1475	-5375	-3900
NO	HANSEBREEN	322	2019	1000	1050	0.206	1350	-5500	-4150
NO	HANSEBREEN	322	2019	950	1000	0.098	1450	-5625	-4175
NO	HANSEBREEN	322	2019	927	950	0.02	1550	-5700	-4150
NO	HELLSTUGUBREEN	300	2018	2150	2229	0.02	1400	-1500	-100
NO	HELLSTUGUBREEN	300	2018	2100	2150	0.08	1370	-1620	-250
NO	HELLSTUGUBREEN	300	2018	2050	2100	0.291	1342	-1640	-298
NO	HELLSTUGUBREEN	300	2018	2000	2050	0.181	1200	-1800	-600
NO	HELLSTUGUBREEN	300	2018	1950	2000	0.307	1041	-1940	-899
NO	HELLSTUGUBREEN	300	2018	1900	1950	0.603	966	-2270	-1304

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
NO	HELLSTUGUBREEN	300	2018	1850	1900	0.373	921	-2620	-1699
NO	HELLSTUGUBREEN	300	2018	1800	1850	0.332	803	-2750	-1947
NO	HELLSTUGUBREEN	300	2018	1750	1800	0.157	586	-2840	-2254
NO	HELLSTUGUBREEN	300	2018	1700	1750	0.088	586	-3140	-2554
NO	HELLSTUGUBREEN	300	2018	1650	1700	0.139	472	-3370	-2898
NO	HELLSTUGUBREEN	300	2018	1600	1650	0.114	455	-3660	-3205
NO	HELLSTUGUBREEN	300	2018	1550	1600	0.124	420	-4020	-3600
NO	HELLSTUGUBREEN	300	2018	1500	1550	0.083	388	-4390	-4002
NO	HELLSTUGUBREEN	300	2018	1482	1500	0.011	300	-4600	-4300
NO	HELLSTUGUBREEN	300	2019	2150	2213	0.017	620	-1120	-500
NO	HELLSTUGUBREEN	300	2019	2100	2150	0.06	740	-1440	-700
NO	HELLSTUGUBREEN	300	2019	2050	2100	0.278	750	-1650	-900
NO	HELLSTUGUBREEN	300	2019	2000	2050	0.178	1110	-2210	-1100
NO	HELLSTUGUBREEN	300	2019	1950	2000	0.186	1040	-2340	-1300
NO	HELLSTUGUBREEN	300	2019	1900	1950	0.607	560	-2160	-1600
NO	HELLSTUGUBREEN	300	2019	1850	1900	0.404	380	-2280	-1900
NO	HELLSTUGUBREEN	300	2019	1800	1850	0.295	610	-2710	-2100
NO	HELLSTUGUBREEN	300	2019	1750	1800	0.181	590	-2940	-2350
NO	HELLSTUGUBREEN	300	2019	1700	1750	0.076	360	-2960	-2600
NO	HELLSTUGUBREEN	300	2019	1650	1700	0.107	430	-3230	-2800
NO	HELLSTUGUBREEN	300	2019	1600	1650	0.104	350	-3550	-3200
NO	HELLSTUGUBREEN	300	2019	1550	1600	0.079	340	-3940	-3600
NO	HELLSTUGUBREEN	300	2019	1500	1550	0.077	140	-4140	-4000
NO	HELLSTUGUBREEN	300	2019	1487	1500	0.007	90	-4290	-4200
NO	LANGFJORDJOEKELEN	323	2018	1000	1043	0.316	1575	-2975	-1400
NO	LANGFJORDJOEKELEN	323	2018	950	1000	0.465	1650	-3100	-1450
NO	LANGFJORDJOEKELEN	323	2018	900	950	0.371	1675	-3250	-1575
NO	LANGFJORDJOEKELEN	323	2018	850	900	0.319	1550	-3400	-1850
NO	LANGFJORDJOEKELEN	323	2018	800	850	0.156	1550	-3575	-2025
NO	LANGFJORDJOEKELEN	323	2018	750	800	0.151	1575	-3750	-2175
NO	LANGFJORDJOEKELEN	323	2018	700	750	0.235	1600	-3950	-2350
NO	LANGFJORDJOEKELEN	323	2018	650	700	0.159	1550	-4175	-2625
NO	LANGFJORDJOEKELEN	323	2018	600	650	0.137	1450	-4450	-3000
NO	LANGFJORDJOEKELEN	323	2018	550	600	0.073	1350	-4750	-3400
NO	LANGFJORDJOEKELEN	323	2018	500	550	0.089	1225	-5050	-3825
NO	LANGFJORDJOEKELEN	323	2018	450	500	0.05	1025	-5350	-4325
NO	LANGFJORDJOEKELEN	323	2018	400	450	0.045	875	-5650	-4775
NO	LANGFJORDJOEKELEN	323	2018	338	400	0.041	750	-6000	-5250
NO	LANGFJORDJOEKELEN	323	2019	1000	1043	0.316	2700	-2725	-25
NO	LANGFJORDJOEKELEN	323	2019	950	1000	0.465	2725	-2700	25
NO	LANGFJORDJOEKELEN	323	2019	900	950	0.371	2675	-2700	-25
NO	LANGFJORDJOEKELEN	323	2019	850	900	0.319	2750	-2725	25
NO	LANGFJORDJOEKELEN	323	2019	800	850	0.156	2850	-2750	100
NO	LANGFJORDJOEKELEN	323	2019	750	800	0.151	2775	-2800	-25
NO	LANGFJORDJOEKELEN	323	2019	700	750	0.235	2575	-2875	-300
NO	LANGFJORDJOEKELEN	323	2019	650	700	0.159	2300	-2975	-675
NO	LANGFJORDJOEKELEN	323	2019	600	650	0.137	2050	-3100	-1050
NO	LANGFJORDJOEKELEN	323	2019	550	600	0.073	1875	-3275	-1400
NO	LANGFJORDJOEKELEN	323	2019	500	550	0.089	1600	-3525	-1925
NO	LANGFJORDJOEKELEN	323	2019	450	500	0.05	1250	-3825	-2575
NO	LANGFJORDJOEKELEN	323	2019	400	450	0.045	1050	-4175	-3125
NO	LANGFJORDJOEKELEN	323	2019	338	400	0.041	1000	-4600	-3600
NO	NIGARDSBREEN	290	2018	1900	1952	0.277	2800	-2000	800
NO	NIGARDSBREEN	290	2018	1800	1900	4.579	2650	-2150	500
NO	NIGARDSBREEN	290	2018	1700	1800	9.051	2600	-2375	225
NO	NIGARDSBREEN	290	2018	1600	1700	12.722	2550	-2650	-100
NO	NIGARDSBREEN	290	2018	1500	1600	8.724	2425	-3050	-625
NO	NIGARDSBREEN	290	2018	1400	1500	5.612	2275	-3700	-1425
NO	NIGARDSBREEN	290	2018	1300	1400	2.015	2075	-4500	-2425
NO	NIGARDSBREEN	290	2018	1200	1300	0.751	1800	-5350	-3550
NO	NIGARDSBREEN	290	2018	1100	1200	0.354	1425	-6225	-4800
NO	NIGARDSBREEN	290	2018	1000	1100	0.495	1075	-7025	-5950
NO	NIGARDSBREEN	290	2018	900	1000	0.424	825	-7750	-6925
NO	NIGARDSBREEN	290	2018	800	900	0.482	625	-8400	-7775
NO	NIGARDSBREEN	290	2018	700	800	0.294	450	-9000	-8550
NO	NIGARDSBREEN	290	2018	600	700	0.385	300	-9575	-9275
NO	NIGARDSBREEN	290	2018	500	600	0.268	175	-10125	-9950
NO	NIGARDSBREEN	290	2018	400	500	0.123	50	-10650	-10600
NO	NIGARDSBREEN	290	2018	330	400	0.055	-25	-11100	-11125
NO	NIGARDSBREEN	290	2019	1900	1952	0.277	2300	-650	1650
NO	NIGARDSBREEN	290	2019	1800	1900	4.579	2375	-975	1400
NO	NIGARDSBREEN	290	2019	1700	1800	9.051	2400	-1425	975
NO	NIGARDSBREEN	290	2019	1600	1700	12.722	2275	-1850	425
NO	NIGARDSBREEN	290	2019	1500	1600	8.724	2075	-2250	-175
NO	NIGARDSBREEN	290	2019	1400	1500	5.612	1875	-2800	-925
NO	NIGARDSBREEN	290	2019	1300	1400	2.015	1575	-3550	-1975
NO	NIGARDSBREEN	290	2019	1200	1300	0.751	1225	-4475	-3250
NO	NIGARDSBREEN	290	2019	1100	1200	0.354	875	-5425	-4550
NO	NIGARDSBREEN	290	2019	1000	1100	0.495	525	-6200	-5675
NO	NIGARDSBREEN	290	2019	900	1000	0.424	225	-6850	-6625
NO	NIGARDSBREEN	290	2019	800	900	0.482	25	-7300	-7275
NO	NIGARDSBREEN	290	2019	700	800	0.294	-125	-7725	-7850
NO	NIGARDSBREEN	290	2019	600	700	0.385	-300	-8125	-8425
NO	NIGARDSBREEN	290	2019	500	600	0.268	-450	-8475	-8925
NO	NIGARDSBREEN	290	2019	400	500	0.123	-600	-8800	-9400
NO	NIGARDSBREEN	290	2019	330	400	0.055	-700	-9050	-9750
NO	REMBESDALSKAAKA	2296	2018	1850	1854	0.029	1850	-2700	-850
NO	REMBESDALSKAAKA	2296	2018	1800	1850	3.213	2200	-2700	-500
NO	REMBESDALSKAAKA	2296	2018	1750	1800	3.992	2400	-2800	-400
NO	REMBESDALSKAAKA	2296	2018	1700	1750	4.048	2150	-2800	-650
NO	REMBESDALSKAAKA	2296	2018	1650	1700	2.281	2000	-2900	-900
NO	REMBESDALSKAAKA	2296	2018	1600	1650	0.957	1700	-3300	-1600
NO	REMBESDALSKAAKA	2296	2018	1550	1600	0.545	1400	-3900	-2500
NO	REMBESDALSKAAKA	2296	2018	1500	1550	0.535	1000	-4500	-3500
NO	REMBESDALSKAAKA	2296	2018	1450	1500	0.336	800	-4800	-4000
NO	REMBESDALSKAAKA	2296	2018	1400	1450	0.197	600	-5100	-4500

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
NO	REMBESDALSKAAKA	2296	2018	1350	1400	0.108	490	-5400	-4910
NO	REMBESDALSKAAKA	2296	2018	1300	1350	0.074	380	-5700	-5320
NO	REMBESDALSKAAKA	2296	2018	1250	1300	0.199	270	-6100	-5830
NO	REMBESDALSKAAKA	2296	2018	1200	1250	0.262	150	-6500	-6350
NO	REMBESDALSKAAKA	2296	2018	1150	1200	0.333	50	-6900	-6850
NO	REMBESDALSKAAKA	2296	2018	1100	1150	0.143	-60	-7300	-7360
NO	REMBESDALSKAAKA	2296	2018	1066	1100	0.012	-150	-7600	-7750
NO	REMBESDALSKAAKA	2296	2019	1850	1854	0.029	1950	-1850	100
NO	REMBESDALSKAAKA	2296	2019	1800	1850	3.213	2050	-1900	150
NO	REMBESDALSKAAKA	2296	2019	1750	1800	3.992	2100	-2000	100
NO	REMBESDALSKAAKA	2296	2019	1700	1750	4.048	1950	-2100	-150
NO	REMBESDALSKAAKA	2296	2019	1650	1700	2.281	1750	-2250	-500
NO	REMBESDALSKAAKA	2296	2019	1600	1650	0.957	1500	-2600	-1100
NO	REMBESDALSKAAKA	2296	2019	1550	1600	0.545	1250	-3700	-2450
NO	REMBESDALSKAAKA	2296	2019	1500	1550	0.535	900	-4350	-3450
NO	REMBESDALSKAAKA	2296	2019	1450	1500	0.336	800	-4550	-3750
NO	REMBESDALSKAAKA	2296	2019	1400	1450	0.197	700	-4750	-4050
NO	REMBESDALSKAAKA	2296	2019	1350	1400	0.108	600	-4950	-4350
NO	REMBESDALSKAAKA	2296	2019	1300	1350	0.074	500	-5150	-4650
NO	REMBESDALSKAAKA	2296	2019	1250	1300	0.199	400	-5400	-5000
NO	REMBESDALSKAAKA	2296	2019	1200	1250	0.262	270	-5700	-5430
NO	REMBESDALSKAAKA	2296	2019	1150	1200	0.333	150	-6000	-5850
NO	REMBESDALSKAAKA	2296	2019	1100	1150	0.143	0	-6300	-6300
NO	REMBESDALSKAAKA	2296	2019	1066	1100	0.012	-100	-6550	-6650
NO	STORBREEN	302	2018	2050	2102	0.004	1850	-1500	350
NO	STORBREEN	302	2018	2000	2050	0.095	1800	-1700	100
NO	STORBREEN	302	2018	1950	2000	0.179	1761	-1950	-189
NO	STORBREEN	302	2018	1900	1950	0.29	1682	-2250	-568
NO	STORBREEN	302	2018	1850	1900	0.345	1575	-2550	-975
NO	STORBREEN	302	2018	1800	1850	0.753	1345	-2800	-1455
NO	STORBREEN	302	2018	1750	1800	0.866	1237	-3050	-1813
NO	STORBREEN	302	2018	1700	1750	0.681	1145	-3250	-2105
NO	STORBREEN	302	2018	1650	1700	0.548	1121	-3530	-2409
NO	STORBREEN	302	2018	1600	1650	0.312	1183	-3780	-2597
NO	STORBREEN	302	2018	1550	1600	0.495	1102	-4000	-2898
NO	STORBREEN	302	2018	1500	1550	0.263	1123	-4250	-3127
NO	STORBREEN	302	2018	1450	1500	0.176	1046	-4500	-3454
NO	STORBREEN	302	2018	1400	1450	0.135	1091	-4850	-3759
NO	STORBREEN	302	2019	2050	2091	0.03	1700	-1500	200
NO	STORBREEN	302	2019	2000	2050	0.138	1672	-1600	72
NO	STORBREEN	302	2019	1950	2000	0.198	1570	-1730	-160
NO	STORBREEN	302	2019	1900	1950	0.317	1506	-1950	-444
NO	STORBREEN	302	2019	1850	1900	0.425	1300	-2050	-750
NO	STORBREEN	302	2019	1800	1850	0.846	967	-2100	-1133
NO	STORBREEN	302	2019	1750	1800	0.763	940	-2400	-1460
NO	STORBREEN	302	2019	1700	1750	0.628	937	-2700	-1763
NO	STORBREEN	302	2019	1650	1700	0.414	978	-3070	-2092
NO	STORBREEN	302	2019	1600	1650	0.334	835	-3180	-2345
NO	STORBREEN	302	2019	1550	1600	0.39	765	-3300	-2535
NO	STORBREEN	302	2019	1500	1550	0.197	623	-3350	-2727
NO	STORBREEN	302	2019	1450	1500	0.146	586	-3500	-2914
NO	STORBREEN	302	2019	1420	1450	0.05	583	-3580	-2997
NP - Nepal									
NP	RIKHA SAMBA	1516	2018	6500	6515	0.005			226
NP	RIKHA SAMBA	1516	2018	6450	6500	0.012			226
NP	RIKHA SAMBA	1516	2018	6400	6450	0.039			226
NP	RIKHA SAMBA	1516	2018	6350	6400	0.048			226
NP	RIKHA SAMBA	1516	2018	6300	6350	0.071			226
NP	RIKHA SAMBA	1516	2018	6250	6300	0.089			226
NP	RIKHA SAMBA	1516	2018	6200	6250	0.091			226
NP	RIKHA SAMBA	1516	2018	6150	6200	0.087			226
NP	RIKHA SAMBA	1516	2018	6100	6150	0.114			226
NP	RIKHA SAMBA	1516	2018	6050	6100	0.21			226
NP	RIKHA SAMBA	1516	2018	6000	6050	0.291			226
NP	RIKHA SAMBA	1516	2018	5950	6000	0.531			226
NP	RIKHA SAMBA	1516	2018	5900	5950	0.5			171
NP	RIKHA SAMBA	1516	2018	5850	5900	0.456			116
NP	RIKHA SAMBA	1516	2018	5800	5850	0.588			61
NP	RIKHA SAMBA	1516	2018	5750	5800	0.907			6
NP	RIKHA SAMBA	1516	2018	5700	5750	0.474			-381
NP	RIKHA SAMBA	1516	2018	5650	5700	0.402			-982
NP	RIKHA SAMBA	1516	2018	5600	5650	0.362			-1583
NP	RIKHA SAMBA	1516	2018	5550	5600	0.183			-2184
NP	RIKHA SAMBA	1516	2018	5500	5550	0.104			-2784
NP	RIKHA SAMBA	1516	2018	5450	5500	0.15			-3385
NP	RIKHA SAMBA	1516	2018	5416	5450	0.045			-3986
NP	RIKHA SAMBA	1516	2019	6500	6515	0.005			238
NP	RIKHA SAMBA	1516	2019	6450	6500	0.012			238
NP	RIKHA SAMBA	1516	2019	6400	6450	0.039			238
NP	RIKHA SAMBA	1516	2019	6350	6400	0.048			238
NP	RIKHA SAMBA	1516	2019	6300	6350	0.071			238
NP	RIKHA SAMBA	1516	2019	6250	6300	0.089			238
NP	RIKHA SAMBA	1516	2019	6200	6250	0.091			238
NP	RIKHA SAMBA	1516	2019	6150	6200	0.087			238
NP	RIKHA SAMBA	1516	2019	6100	6150	0.114			238
NP	RIKHA SAMBA	1516	2019	6050	6100	0.21			238
NP	RIKHA SAMBA	1516	2019	6000	6050	0.291			238
NP	RIKHA SAMBA	1516	2019	5950	6000	0.531			238
NP	RIKHA SAMBA	1516	2019	5900	5950	0.5			128
NP	RIKHA SAMBA	1516	2019	5850	5900	0.456			18
NP	RIKHA SAMBA	1516	2019	5800	5850	0.588			-91
NP	RIKHA SAMBA	1516	2019	5750	5800	0.907			-201
NP	RIKHA SAMBA	1516	2019	5700	5750	0.474			-459
NP	RIKHA SAMBA	1516	2019	5650	5700	0.402			-924
NP	RIKHA SAMBA	1516	2019	5600	5650	0.362			-1390

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
NP	RIKHA SAMBA	1516	2019	5550	5600	0.183			-1855
NP	RIKHA SAMBA	1516	2019	5500	5550	0.104			-2320
NP	RIKHA SAMBA	1516	2019	5450	5500	0.15			-2785
NP	RIKHA SAMBA	1516	2019	5416	5450	0.045			-3250
NP	YALA	912	2018	5650	5661	0.003			1791
NP	YALA	912	2018	5600	5650	0.039			1229
NP	YALA	912	2018	5550	5600	0.078			667
NP	YALA	912	2018	5500	5550	0.122			105
NP	YALA	912	2018	5450	5500	0.23			-456
NP	YALA	912	2018	5400	5450	0.221			-1018
NP	YALA	912	2018	5350	5400	0.219			-1580
NP	YALA	912	2018	5300	5350	0.259			-2142
NP	YALA	912	2018	5250	5300	0.223			-2704
NP	YALA	912	2018	5200	5250	0.187			-3265
NP	YALA	912	2018	5168	5200	0.049			-3827
NP	YALA	912	2019	5650	5661	0.003			1626
NP	YALA	912	2019	5600	5650	0.039			1135
NP	YALA	912	2019	5550	5600	0.078			645
NP	YALA	912	2019	5500	5550	0.122			154
NP	YALA	912	2019	5450	5500	0.23			-337
NP	YALA	912	2019	5400	5450	0.221			-827
NP	YALA	912	2019	5350	5400	0.219			-1318
NP	YALA	912	2019	5300	5350	0.259			-1809
NP	YALA	912	2019	5250	5300	0.223			-2299
NP	YALA	912	2019	5200	5250	0.187			-2790
NP	YALA	912	2019	5168	5200	0.049			-3281
NZ - New Zealand									
NZ	ROLLESTON	1538	2018	1900	1920	0.0011			0
NZ	ROLLESTON	1538	2018	1880	1900	0.0045			0
NZ	ROLLESTON	1538	2018	1860	1880	0.009			36
NZ	ROLLESTON	1538	2018	1840	1860	0.0123			72
NZ	ROLLESTON	1538	2018	1820	1840	0.0146			323
NZ	ROLLESTON	1538	2018	1800	1820	0.0224			-1392
NZ	ROLLESTON	1538	2018	1780	1800	0.0157			-2344
NZ	ROLLESTON	1538	2018	1760	1780	0.0123			-3197
NZ	ROLLESTON	1538	2018	1740	1760	0.0135			-3863
NZ	ROLLESTON	1538	2018	1720	1740	0.0067			-4100
NZ	ROLLESTON	1538	2018	1700	1720	0.0011			-3586
NZ	ROLLESTON	1538	2019	1900	1920	0.0011			89
NZ	ROLLESTON	1538	2019	1880	1900	0.0045			199
NZ	ROLLESTON	1538	2019	1860	1880	0.0079			1
NZ	ROLLESTON	1538	2019	1840	1860	0.0123			-513
NZ	ROLLESTON	1538	2019	1820	1840	0.0146			-1082
NZ	ROLLESTON	1538	2019	1800	1820	0.0224			-1777
NZ	ROLLESTON	1538	2019	1780	1800	0.0168			-2404
NZ	ROLLESTON	1538	2019	1760	1780	0.0123			-2999
NZ	ROLLESTON	1538	2019	1740	1760	0.0146			-3581
NZ	ROLLESTON	1538	2019	1720	1740	0.0067			-4237
NZ	ROLLESTON	1538	2019	1700	1720	0.0011			-5406
PE - Peru									
PE	ARTESONRAJU	3292	2018	5350	5400	0.6741			500
PE	ARTESONRAJU	3292	2018	5250	5350	0.4881			500
PE	ARTESONRAJU	3292	2018	5200	5250	0.2524			810
PE	ARTESONRAJU	3292	2018	5150	5200	0.2714			1012
PE	ARTESONRAJU	3292	2018	5100	5150	0.2292			1246
PE	ARTESONRAJU	3292	2018	5050	5100	0.2492			1102
PE	ARTESONRAJU	3292	2018	5000	5050	0.1882			409
PE	ARTESONRAJU	3292	2018	4950	5000	0.2976			-170
PE	ARTESONRAJU	3292	2018	4900	4950	0.1297			-1264
PE	ARTESONRAJU	3292	2018	4860	4900	0.1292			-1939
PE	ARTESONRAJU	3292	2018	4840	4860	0.0881			-2581
PE	ARTESONRAJU	3292	2018	4820	4840	0.0964			-3602
PE	ARTESONRAJU	3292	2018	4800	4820	0.113			-5293
PE	ARTESONRAJU	3292	2018	4780	4800	0.0888			-6606
PE	ARTESONRAJU	3292	2018	4760	4780	0.0828			-6688
PE	ARTESONRAJU	3292	2018	4740	4760	0.0679			-7866
PE	ARTESONRAJU	3292	2018	4720	4740	0.0673			-8883
PE	ARTESONRAJU	3292	2018	4700	4720	0.0632			-9801
PE	ARTESONRAJU	3292	2019	5350	5400	0.6741			750
PE	ARTESONRAJU	3292	2019	5250	5350	0.4881			800
PE	ARTESONRAJU	3292	2019	5200	5250	0.2524			987
PE	ARTESONRAJU	3292	2019	5150	5200	0.2714			711
PE	ARTESONRAJU	3292	2019	5100	5150	0.2292			463
PE	ARTESONRAJU	3292	2019	5050	5100	0.2492			194
PE	ARTESONRAJU	3292	2019	5000	5050	0.1882			-578
PE	ARTESONRAJU	3292	2019	4950	5000	0.2976			-1402
PE	ARTESONRAJU	3292	2019	4900	4950	0.1297			-2979
PE	ARTESONRAJU	3292	2019	4860	4900	0.1197			-3949
PE	ARTESONRAJU	3292	2019	4840	4860	0.0851			-4500
PE	ARTESONRAJU	3292	2019	4820	4840	0.0895			-5196
PE	ARTESONRAJU	3292	2019	4800	4820	0.1158			-5673
PE	ARTESONRAJU	3292	2019	4780	4800	0.0937			-6294
PE	ARTESONRAJU	3292	2019	4760	4780	0.0826			-7523
PE	ARTESONRAJU	3292	2019	4740	4760	0.0631			-8960
PE	ARTESONRAJU	3292	2019	4720	4740	0.0563			-10192
PE	ARTESONRAJU	3292	2019	4700	4720	0.0702			-11677
PE	YANAMAREY	226	2018	5100	5200	0.023			961
PE	YANAMAREY	226	2018	5050	5100	0.0236			1344
PE	YANAMAREY	226	2018	5000	5050	0.035			1198
PE	YANAMAREY	226	2018	4950	5000	0.042			448
PE	YANAMAREY	226	2018	4900	4950	0.0339			-413
PE	YANAMAREY	226	2018	4880	4900	0.0154			-1146
PE	YANAMAREY	226	2018	4860	4880	0.0144			-1671
PE	YANAMAREY	226	2018	4840	4860	0.013			-2128

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
PE	YANAMAREY	226	2018	4820	4840	0.0128			-2601
PE	YANAMAREY	226	2018	4800	4820	0.0116			-2814
PE	YANAMAREY	226	2018	4780	4800	0.0093			-2968
PE	YANAMAREY	226	2018	4760	4780	0.0053			-2853
PE	YANAMAREY	226	2018	4740	4760	0.003			-2489
PE	YANAMAREY	226	2018	4720	4740	0.0011			-2600
PE	YANAMAREY	226	2019	5100	5200	0.0231			971
PE	YANAMAREY	226	2019	5050	5100	0.0236			1163
PE	YANAMAREY	226	2019	5000	5050	0.035			940
PE	YANAMAREY	226	2019	4950	5000	0.042			181
PE	YANAMAREY	226	2019	4900	4950	0.03			-916
PE	YANAMAREY	226	2019	4880	4900	0.0167			-1706
PE	YANAMAREY	226	2019	4860	4880	0.0155			-2122
PE	YANAMAREY	226	2019	4840	4860	0.0104			-2807
PE	YANAMAREY	226	2019	4820	4840	0.0103			-3564
PE	YANAMAREY	226	2019	4800	4820	0.0109			-4656
PE	YANAMAREY	226	2019	4780	4800	0.0087			-5731
PE	YANAMAREY	226	2019	4760	4780	0.0048			-5613
PE	YANAMAREY	226	2019	4740	4760	0.0026			-5386
PE	YANAMAREY	226	2019	4720	4740	0.0007			-5473
RU - Russia									
RU	GARABASHI	761	2018	4600	4825	0.228	200	-100	100
RU	GARABASHI	761	2018	4500	4600	0.13	303	-154	149
RU	GARABASHI	761	2018	4400	4500	0.156	344	-267	77
RU	GARABASHI	761	2018	4300	4400	0.152	426	-387	39
RU	GARABASHI	761	2018	4200	4300	0.221	548	-548	0
RU	GARABASHI	761	2018	4100	4200	0.263	763	-682	81
RU	GARABASHI	761	2018	4000	4100	0.422	1250	-1067	183
RU	GARABASHI	761	2018	3900	4000	0.628	1667	-1818	-151
RU	GARABASHI	761	2018	3800	3900	0.635	1389	-2706	-1317
RU	GARABASHI	761	2018	3700	3800	0.451	2114	-3431	-1317
RU	GARABASHI	761	2018	3600	3700	0.245	1833	-4100	-2267
RU	GARABASHI	761	2018	3500	3600	0.196	1450	-4596	-3146
RU	GARABASHI	761	2018	3400	3500	0.23	1546	-5152	-3606
RU	GARABASHI	761	2018	3300	3400	0.043	1350	-5657	-4307
RU	GARABASHI	761	2019	4600	5000	0.066	553	-158	395
RU	GARABASHI	761	2019	4500	4600	0.101	600	-178	422
RU	GARABASHI	761	2019	4400	4500	0.18	625	-416	210
RU	GARABASHI	761	2019	4300	4400	0.156	589	-675	-86
RU	GARABASHI	761	2019	4200	4300	0.162	565	-655	-90
RU	GARABASHI	761	2019	4100	4200	0.234	806	-752	54
RU	GARABASHI	761	2019	4000	4100	0.235	818	-1072	-254
RU	GARABASHI	761	2019	3900	4000	0.859	1087	-1499	-412
RU	GARABASHI	761	2019	3800	3900	0.673	1248	-1783	-535
RU	GARABASHI	761	2019	3700	3800	0.594	1371	-2391	-1019
RU	GARABASHI	761	2019	3600	3700	0.253	1207	-2972	-1764
RU	GARABASHI	761	2019	3500	3600	0.193	1153	-3556	-2403
RU	GARABASHI	761	2019	3400	3500	0.224	1169	-4309	-3139
RU	GARABASHI	761	2019	3300	3400	0.123	1124	-5040	-3916
RU	LEVIY AKTRU	794	2019	3900	4000	0.051	217	-20	197
RU	LEVIY AKTRU	794	2019	3800	3900	0.121	234	-22	212
RU	LEVIY AKTRU	794	2019	3700	3800	0.127	199	-28	170
RU	LEVIY AKTRU	794	2019	3600	3700	0.522	319	-89	230
RU	LEVIY AKTRU	794	2019	3500	3600	0.618	374	-178	196
RU	LEVIY AKTRU	794	2019	3400	3500	0.478	536	-345	191
RU	LEVIY AKTRU	794	2019	3300	3400	0.599	737	-468	268
RU	LEVIY AKTRU	794	2019	3200	3300	0.572	658	-673	-15
RU	LEVIY AKTRU	794	2019	3100	3200	0.526	759	-1070	-311
RU	LEVIY AKTRU	794	2019	3000	3100	0.366	650	-1611	-962
RU	LEVIY AKTRU	794	2019	2900	3000	0.401	721	-1978	-1257
RU	LEVIY AKTRU	794	2019	2800	2900	0.482	585	-2280	-1695
RU	LEVIY AKTRU	794	2019	2700	2800	0.407	545	-2401	-1856
RU	LEVIY AKTRU	794	2019	2600	2700	0.094	467	-2886	-2419
SE - Sweden									
SE	MARMAGLACIAEREN	1461	2018	1740	1760	0.0005	870	-660	210
SE	MARMAGLACIAEREN	1461	2018	1720	1740	0.0116	1060	-750	310
SE	MARMAGLACIAEREN	1461	2018	1700	1720	0.0247	1140	-860	270
SE	MARMAGLACIAEREN	1461	2018	1680	1700	0.0392	1240	-990	250
SE	MARMAGLACIAEREN	1461	2018	1660	1680	0.1013	1350	-1130	220
SE	MARMAGLACIAEREN	1461	2018	1640	1660	0.1818	1240	-1240	-10
SE	MARMAGLACIAEREN	1461	2018	1620	1640	0.1799	960	-1370	-420
SE	MARMAGLACIAEREN	1461	2018	1600	1620	0.2849	690	-1500	-810
SE	MARMAGLACIAEREN	1461	2018	1580	1600	0.2305	540	-1620	-1080
SE	MARMAGLACIAEREN	1461	2018	1560	1580	0.1757	590	-1750	-1170
SE	MARMAGLACIAEREN	1461	2018	1540	1560	0.203	620	-1880	-1260
SE	MARMAGLACIAEREN	1461	2018	1520	1540	0.2848	610	-2010	-1410
SE	MARMAGLACIAEREN	1461	2018	1500	1520	0.3134	570	-2130	-1560
SE	MARMAGLACIAEREN	1461	2018	1480	1500	0.1773	550	-2260	-1710
SE	MARMAGLACIAEREN	1461	2018	1460	1480	0.1653	610	-2390	-1780
SE	MARMAGLACIAEREN	1461	2018	1440	1460	0.2132	600	-2520	-1920
SE	MARMAGLACIAEREN	1461	2018	1420	1440	0.1968	540	-2640	-2100
SE	MARMAGLACIAEREN	1461	2018	1400	1420	0.1415	560	-2770	-2210
SE	MARMAGLACIAEREN	1461	2018	1380	1400	0.1142	600	-2900	-2300
SE	MARMAGLACIAEREN	1461	2018	1360	1380	0.1099	670	-3030	-2360
SE	MARMAGLACIAEREN	1461	2018	1340	1360	0.1058	650	-3160	-2510
SE	MARMAGLACIAEREN	1461	2018	1320	1340	0.0517	470	-3260	-2790
SE	MARMAGLACIAEREN	1461	2019	1740	1760	0.0005	1480	-560	920
SE	MARMAGLACIAEREN	1461	2019	1720	1740	0.0116	1570	-640	930
SE	MARMAGLACIAEREN	1461	2019	1700	1720	0.0247	1610	-750	870
SE	MARMAGLACIAEREN	1461	2019	1680	1700	0.0392	1660	-870	790
SE	MARMAGLACIAEREN	1461	2019	1660	1680	0.1013	1690	-990	700
SE	MARMAGLACIAEREN	1461	2019	1640	1660	0.1818	1680	-1100	570
SE	MARMAGLACIAEREN	1461	2019	1620	1640	0.1799	1320	-1220	90
SE	MARMAGLACIAEREN	1461	2019	1600	1620	0.2849	880	-1340	-460

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
SE	MARMAGLACIAEREN	1461	2019	1580	1600	0.2305	720	-1460	-730
SE	MARMAGLACIAEREN	1461	2019	1560	1580	0.1757	760	-1580	-820
SE	MARMAGLACIAEREN	1461	2019	1540	1560	0.203	800	-1700	-900
SE	MARMAGLACIAEREN	1461	2019	1520	1540	0.2848	790	-1820	-1030
SE	MARMAGLACIAEREN	1461	2019	1500	1520	0.3134	810	-1930	-1130
SE	MARMAGLACIAEREN	1461	2019	1480	1500	0.1773	940	-2050	-1120
SE	MARMAGLACIAEREN	1461	2019	1460	1480	0.1653	910	-2180	-1270
SE	MARMAGLACIAEREN	1461	2019	1440	1460	0.2132	810	-2300	-1490
SE	MARMAGLACIAEREN	1461	2019	1420	1440	0.1968	770	-2410	-1640
SE	MARMAGLACIAEREN	1461	2019	1400	1420	0.1415	790	-2530	-1740
SE	MARMAGLACIAEREN	1461	2019	1380	1400	0.1142	860	-2650	-1790
SE	MARMAGLACIAEREN	1461	2019	1360	1380	0.1099	950	-2770	-1820
SE	MARMAGLACIAEREN	1461	2019	1340	1360	0.1058	1020	-2890	-1870
SE	MARMAGLACIAEREN	1461	2019	1320	1340	0.0517	1060	-2990	-1930
SE	RABOTS GLACIAER	334	2018	1660	1680	0.0011	1190	-660	530
SE	RABOTS GLACIAER	334	2018	1640	1660	0.0103	1180	-740	440
SE	RABOTS GLACIAER	334	2018	1620	1640	0.0216	1170	-850	320
SE	RABOTS GLACIAER	334	2018	1600	1620	0.0305	1160	-950	200
SE	RABOTS GLACIAER	334	2018	1580	1600	0.039	1140	-1060	80
SE	RABOTS GLACIAER	334	2018	1560	1580	0.0602	1140	-1170	-30
SE	RABOTS GLACIAER	334	2018	1540	1560	0.0738	1110	-1280	-170
SE	RABOTS GLACIAER	334	2018	1520	1540	0.1202	1080	-1390	-320
SE	RABOTS GLACIAER	334	2018	1500	1520	0.184	1060	-1500	-440
SE	RABOTS GLACIAER	334	2018	1480	1500	0.1814	980	-1610	-630
SE	RABOTS GLACIAER	334	2018	1460	1480	0.1404	850	-1710	-870
SE	RABOTS GLACIAER	334	2018	1440	1460	0.1156	770	-1830	-1050
SE	RABOTS GLACIAER	334	2018	1420	1440	0.0953	730	-1930	-1210
SE	RABOTS GLACIAER	334	2018	1400	1420	0.0832	690	-2050	-1350
SE	RABOTS GLACIAER	334	2018	1380	1400	0.0996	710	-2160	-1450
SE	RABOTS GLACIAER	334	2018	1360	1380	0.2203	780	-2270	-1500
SE	RABOTS GLACIAER	334	2018	1340	1360	0.2502	720	-2380	-1660
SE	RABOTS GLACIAER	334	2018	1320	1340	0.204	680	-2480	-1800
SE	RABOTS GLACIAER	334	2018	1300	1320	0.1182	600	-2590	-1990
SE	RABOTS GLACIAER	334	2018	1280	1300	0.1156	540	-2710	-2170
SE	RABOTS GLACIAER	334	2018	1260	1280	0.198	520	-2820	-2300
SE	RABOTS GLACIAER	334	2018	1240	1260	0.1893	490	-2920	-2430
SE	RABOTS GLACIAER	334	2018	1220	1240	0.1567	460	-3030	-2570
SE	RABOTS GLACIAER	334	2018	1200	1220	0.1351	440	-3140	-2700
SE	RABOTS GLACIAER	334	2018	1180	1200	0.0967	440	-3250	-2810
SE	RABOTS GLACIAER	334	2018	1160	1180	0.0662	460	-3360	-2900
SE	RABOTS GLACIAER	334	2018	1140	1160	0.0527	480	-3470	-2990
SE	RABOTS GLACIAER	334	2018	1120	1140	0.0418	520	-3580	-3060
SE	RABOTS GLACIAER	334	2018	1100	1120	0.0258	510	-3690	-3170
SE	RABOTS GLACIAER	334	2018	1080	1100	0.005	520	-3760	-3240
SE	RABOTS GLACIAER	334	2019	1660	1680	0.0011	1480	-380	1100
SE	RABOTS GLACIAER	334	2019	1640	1660	0.0103	1470	-450	1020
SE	RABOTS GLACIAER	334	2019	1620	1640	0.0216	1470	-540	930
SE	RABOTS GLACIAER	334	2019	1600	1620	0.0305	1460	-630	830
SE	RABOTS GLACIAER	334	2019	1580	1600	0.039	1450	-730	720
SE	RABOTS GLACIAER	334	2019	1560	1580	0.0602	1440	-830	610
SE	RABOTS GLACIAER	334	2019	1540	1560	0.0738	1410	-920	490
SE	RABOTS GLACIAER	334	2019	1520	1540	0.1202	1350	-1020	340
SE	RABOTS GLACIAER	334	2019	1500	1520	0.184	1320	-1110	210
SE	RABOTS GLACIAER	334	2019	1480	1500	0.1814	1290	-1200	90
SE	RABOTS GLACIAER	334	2019	1460	1480	0.1404	1270	-1300	-20
SE	RABOTS GLACIAER	334	2019	1440	1460	0.1156	1270	-1390	-130
SE	RABOTS GLACIAER	334	2019	1420	1440	0.0953	1270	-1490	-220
SE	RABOTS GLACIAER	334	2019	1400	1420	0.0832	1260	-1590	-320
SE	RABOTS GLACIAER	334	2019	1380	1400	0.0996	1270	-1690	-420
SE	RABOTS GLACIAER	334	2019	1360	1380	0.2203	1260	-1780	-520
SE	RABOTS GLACIAER	334	2019	1340	1360	0.2502	1210	-1870	-660
SE	RABOTS GLACIAER	334	2019	1320	1340	0.204	1170	-1960	-790
SE	RABOTS GLACIAER	334	2019	1300	1320	0.1182	1130	-2060	-930
SE	RABOTS GLACIAER	334	2019	1280	1300	0.1156	1100	-2160	-1060
SE	RABOTS GLACIAER	334	2019	1260	1280	0.198	1060	-2260	-1190
SE	RABOTS GLACIAER	334	2019	1240	1260	0.1893	1000	-2350	-1340
SE	RABOTS GLACIAER	334	2019	1220	1240	0.1567	950	-2440	-1490
SE	RABOTS GLACIAER	334	2019	1200	1220	0.1351	910	-2540	-1630
SE	RABOTS GLACIAER	334	2019	1180	1200	0.0967	870	-2630	-1770
SE	RABOTS GLACIAER	334	2019	1160	1180	0.0662	840	-2730	-1890
SE	RABOTS GLACIAER	334	2019	1140	1160	0.0527	810	-2820	-2020
SE	RABOTS GLACIAER	334	2019	1120	1140	0.0418	780	-2920	-2140
SE	RABOTS GLACIAER	334	2019	1100	1120	0.0258	750	-3010	-2260
SE	RABOTS GLACIAER	334	2019	1080	1100	0.005	730	-3080	-2350
SE	RIUKOJIETNA	342	2018	1420	1440	0.2778	600	-2380	-1780
SE	RIUKOJIETNA	342	2018	1400	1420	0.3116	630	-2320	-1690
SE	RIUKOJIETNA	342	2018	1380	1400	0.2785	630	-2230	-1600
SE	RIUKOJIETNA	342	2018	1360	1380	0.2723	630	-2150	-1510
SE	RIUKOJIETNA	342	2018	1340	1360	0.2623	640	-2060	-1430
SE	RIUKOJIETNA	342	2018	1320	1340	0.2833	640	-1980	-1340
SE	RIUKOJIETNA	342	2018	1300	1320	0.3151	630	-1890	-1260
SE	RIUKOJIETNA	342	2018	1280	1300	0.266	650	-1810	-1160
SE	RIUKOJIETNA	342	2018	1260	1280	0.1722	650	-1730	-1070
SE	RIUKOJIETNA	342	2018	1240	1260	0.0827	650	-1640	-990
SE	RIUKOJIETNA	342	2018	1220	1240	0.054	630	-1550	-930
SE	RIUKOJIETNA	342	2018	1200	1220	0.0345	600	-1480	-880
SE	RIUKOJIETNA	342	2018	1180	1200	0.0195	560	-1380	-830
SE	RIUKOJIETNA	342	2018	1160	1180	0.0171	520	-1300	-780
SE	RIUKOJIETNA	342	2018	1140	1160	0.0024	500	-1240	-750
SE	RIUKOJIETNA	342	2019	1420	1440	0.2778	1190	-2100	-900
SE	RIUKOJIETNA	342	2019	1400	1420	0.3116	1470	-2100	-630
SE	RIUKOJIETNA	342	2019	1380	1400	0.2785	1530	-2100	-580
SE	RIUKOJIETNA	342	2019	1360	1380	0.2723	1530	-2110	-580
SE	RIUKOJIETNA	342	2019	1340	1360	0.2623	1530	-2110	-580
SE	RIUKOJIETNA	342	2019	1320	1340	0.2833	1510	-2120	-610
SE	RIUKOJIETNA	342	2019	1300	1320	0.3151	1500	-2120	-620

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
SE	RIUKOJIETNA	342	2019	1280	1300	0.266	1580	-2120	-550
SE	RIUKOJIETNA	342	2019	1260	1280	0.1722	1640	-2130	-490
SE	RIUKOJIETNA	342	2019	1240	1260	0.0827	1680	-2130	-450
SE	RIUKOJIETNA	342	2019	1220	1240	0.054	1730	-2140	-410
SE	RIUKOJIETNA	342	2019	1200	1220	0.0345	1700	-2140	-440
SE	RIUKOJIETNA	342	2019	1180	1200	0.0195	1620	-2140	-530
SE	RIUKOJIETNA	342	2019	1160	1180	0.0171	1650	-2150	-500
SE	RIUKOJIETNA	342	2019	1140	1160	0.0024	1650	-2150	-500
SE	STORGLACIAEREN	332	2018	1700	1720	0.0122	2000	-1730	260
SE	STORGLACIAEREN	332	2018	1680	1700	0.0381	1940	-1740	210
SE	STORGLACIAEREN	332	2018	1660	1680	0.058	1970	-1680	290
SE	STORGLACIAEREN	332	2018	1640	1660	0.1001	1990	-1580	410
SE	STORGLACIAEREN	332	2018	1620	1640	0.1445	1920	-1490	420
SE	STORGLACIAEREN	332	2018	1600	1620	0.1335	1770	-1490	280
SE	STORGLACIAEREN	332	2018	1580	1600	0.1233	1620	-1560	70
SE	STORGLACIAEREN	332	2018	1560	1580	0.1234	1460	-1760	-300
SE	STORGLACIAEREN	332	2018	1540	1560	0.0953	1390	-2020	-630
SE	STORGLACIAEREN	332	2018	1520	1540	0.0914	1390	-2120	-740
SE	STORGLACIAEREN	332	2018	1500	1520	0.149	1390	-2070	-680
SE	STORGLACIAEREN	332	2018	1480	1500	0.2095	1220	-2300	-1080
SE	STORGLACIAEREN	332	2018	1460	1480	0.0988	1040	-2790	-1760
SE	STORGLACIAEREN	332	2018	1440	1460	0.0622	970	-2990	-2020
SE	STORGLACIAEREN	332	2018	1420	1440	0.0581	960	-3070	-2110
SE	STORGLACIAEREN	332	2018	1400	1420	0.0887	910	-3110	-2200
SE	STORGLACIAEREN	332	2018	1380	1400	0.1675	850	-3050	-2190
SE	STORGLACIAEREN	332	2018	1360	1380	0.2635	710	-3020	-2310
SE	STORGLACIAEREN	332	2018	1340	1360	0.2866	590	-3250	-2670
SE	STORGLACIAEREN	332	2018	1320	1340	0.1743	530	-3490	-2960
SE	STORGLACIAEREN	332	2018	1300	1320	0.0957	520	-3630	-3110
SE	STORGLACIAEREN	332	2018	1280	1300	0.0705	510	-3770	-3260
SE	STORGLACIAEREN	332	2018	1260	1280	0.074	500	-3980	-3480
SE	STORGLACIAEREN	332	2018	1240	1260	0.0658	530	-4230	-3700
SE	STORGLACIAEREN	332	2018	1220	1240	0.0486	570	-4370	-3800
SE	STORGLACIAEREN	332	2018	1200	1220	0.0339	620	-4460	-3840
SE	STORGLACIAEREN	332	2018	1180	1200	0.0166	660	-4540	-3880
SE	STORGLACIAEREN	332	2018	1160	1180	0.0062	670	-4560	-3890
SE	STORGLACIAEREN	332	2019	1700	1720	0.0122	2430	-750	1680
SE	STORGLACIAEREN	332	2019	1680	1700	0.0381	2430	-780	1650
SE	STORGLACIAEREN	332	2019	1660	1680	0.058	2740	-890	1850
SE	STORGLACIAEREN	332	2019	1640	1660	0.1001	2930	-920	2010
SE	STORGLACIAEREN	332	2019	1620	1640	0.1445	2830	-880	1950
SE	STORGLACIAEREN	332	2019	1600	1620	0.1335	2580	-980	1590
SE	STORGLACIAEREN	332	2019	1580	1600	0.1233	2370	-1130	1240
SE	STORGLACIAEREN	332	2019	1560	1580	0.1234	2100	-1240	860
SE	STORGLACIAEREN	332	2019	1540	1560	0.0953	1840	-1230	610
SE	STORGLACIAEREN	332	2019	1520	1540	0.0914	1820	-1280	540
SE	STORGLACIAEREN	332	2019	1500	1520	0.149	1900	-1350	560
SE	STORGLACIAEREN	332	2019	1480	1500	0.2095	1810	-1560	240
SE	STORGLACIAEREN	332	2019	1460	1480	0.0988	1470	-1670	-200
SE	STORGLACIAEREN	332	2019	1440	1460	0.0622	1490	-1900	-400
SE	STORGLACIAEREN	332	2019	1420	1440	0.0581	1600	-2160	-560
SE	STORGLACIAEREN	332	2019	1400	1420	0.0887	1580	-2280	-710
SE	STORGLACIAEREN	332	2019	1380	1400	0.1675	1260	-2260	-1000
SE	STORGLACIAEREN	332	2019	1360	1380	0.2635	1050	-2320	-1270
SE	STORGLACIAEREN	332	2019	1340	1360	0.2866	890	-2380	-1490
SE	STORGLACIAEREN	332	2019	1320	1340	0.1743	730	-2550	-1820
SE	STORGLACIAEREN	332	2019	1300	1320	0.0957	920	-2900	-1980
SE	STORGLACIAEREN	332	2019	1280	1300	0.0705	940	-3100	-2160
SE	STORGLACIAEREN	332	2019	1260	1280	0.074	740	-3010	-2270
SE	STORGLACIAEREN	332	2019	1240	1260	0.0658	810	-3100	-2290
SE	STORGLACIAEREN	332	2019	1220	1240	0.0486	970	-3250	-2270
SE	STORGLACIAEREN	332	2019	1200	1220	0.0339	1050	-3300	-2250
SE	STORGLACIAEREN	332	2019	1180	1200	0.0166	990	-3240	-2250
SE	STORGLACIAEREN	332	2019	1160	1180	0.0062	810	-3030	-2220
SJ - Svalbard (Norway)									
SJ	GROENFJORD E	3947	2018	550	600	0.003			-750
SJ	GROENFJORD E	3947	2018	500	550	0.075			-786
SJ	GROENFJORD E	3947	2018	450	500	0.332			-857
SJ	GROENFJORD E	3947	2018	400	450	0.835			-992
SJ	GROENFJORD E	3947	2018	350	400	0.969			-1078
SJ	GROENFJORD E	3947	2018	300	350	1.13			-1193
SJ	GROENFJORD E	3947	2018	250	300	0.959			-1321
SJ	GROENFJORD E	3947	2018	200	250	0.708			-1690
SJ	GROENFJORD E	3947	2018	150	200	0.574			-2017
SJ	GROENFJORD E	3947	2018	100	150	0.495			-2525
SJ	GROENFJORD E	3947	2018	50	100	0.069			-3128
SJ	GROENFJORD E	3947	2019	550	600	0.003	733	-1274	-541
SJ	GROENFJORD E	3947	2019	500	550	0.075	786	-1494	-708
SJ	GROENFJORD E	3947	2019	450	500	0.332	714	-1454	-740
SJ	GROENFJORD E	3947	2019	400	450	0.835	661	-1309	-648
SJ	GROENFJORD E	3947	2019	350	400	0.969	604	-1553	-949
SJ	GROENFJORD E	3947	2019	300	350	1.13	494	-1791	-1297
SJ	GROENFJORD E	3947	2019	250	300	0.959	410	-2083	-1673
SJ	GROENFJORD E	3947	2019	200	250	0.708	433	-2470	-2038
SJ	GROENFJORD E	3947	2019	150	200	0.574	471	-2897	-2426
SJ	GROENFJORD E	3947	2019	100	150	0.495	502	-3391	-2889
SJ	GROENFJORD E	3947	2019	50	100	0.069	516	-3598	-3081
SJ	HANSBREEN	306	2018	450	500	6.71	1112	-805	308
SJ	HANSBREEN	306	2018	400	450	7.39	1048	-981	67
SJ	HANSBREEN	306	2018	350	400	8.1	984	-1200	-216
SJ	HANSBREEN	306	2018	300	350	8.56	924	-1437	-513
SJ	HANSBREEN	306	2018	250	300	8.25	860	-1670	-810
SJ	HANSBREEN	306	2018	200	250	6.58	800	-1898	-1098
SJ	HANSBREEN	306	2018	150	200	5.13	736	-2131	-1395
SJ	HANSBREEN	306	2018	100	150	3.82	672	-2364	-1692

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
SJ	HANSBREEN	306	2018	0	100	2.22	580	-2713	-2133
SJ	HANSBREEN	306	2019	450	500	6.71	1340	-440	900
SJ	HANSBREEN	306	2019	400	450	7.39	1232	-707	525
SJ	HANSBREEN	306	2019	350	400	8.1025	1120	-949	171
SJ	HANSBREEN	306	2019	300	350	8.555	1012	-1291	-279
SJ	HANSBREEN	306	2019	250	300	8.25	900	-1629	-729
SJ	HANSBREEN	306	2019	200	250	6.5775	792	-1980	-1188
SJ	HANSBREEN	306	2019	150	200	5.125	680	-2318	-1638
SJ	HANSBREEN	306	2019	100	150	3.817	568	-2656	-2088
SJ	HANSBREEN	306	2019	0	100	2.215	404	-3176	-2772
SJ	WALDEMARBREEN	2307	2018	500	550	0.076			-500
SJ	WALDEMARBREEN	2307	2018	450	500	0.107			-700
SJ	WALDEMARBREEN	2307	2018	400	450	0.326			-1104
SJ	WALDEMARBREEN	2307	2018	350	400	0.3			-1300
SJ	WALDEMARBREEN	2307	2018	300	350	0.268			-1484
SJ	WALDEMARBREEN	2307	2018	250	300	0.457			-1901
SJ	WALDEMARBREEN	2307	2018	200	250	0.579			-2157
SJ	WALDEMARBREEN	2307	2018	150	200	0.283			-2614
SJ	WALDEMARBREEN	2307	2018	100	150	0.005			-3181
SJ	WALDEMARBREEN	2307	2019	500	550	0.076			0
SJ	WALDEMARBREEN	2307	2019	450	500	0.107			-103
SJ	WALDEMARBREEN	2307	2019	400	450	0.326			-315
SJ	WALDEMARBREEN	2307	2019	350	400	0.3			-683
SJ	WALDEMARBREEN	2307	2019	300	350	0.268			-951
SJ	WALDEMARBREEN	2307	2019	250	300	0.457			-1205
SJ	WALDEMARBREEN	2307	2019	200	250	0.579			-1370
SJ	WALDEMARBREEN	2307	2019	150	200	0.283			-2057
SJ	WALDEMARBREEN	2307	2019	100	150	0.005			-2310
SJ	WERENSKIOLDBREEN	305	2018	600	750	0.76	1272	-10	1262
SJ	WERENSKIOLDBREEN	305	2018	500	600	3.56	1072	-504	568
SJ	WERENSKIOLDBREEN	305	2018	400	500	7.39	872	-1024	-152
SJ	WERENSKIOLDBREEN	305	2018	300	400	7.66	672	-1544	-872
SJ	WERENSKIOLDBREEN	305	2018	200	300	4.24	472	-2064	-1592
SJ	WERENSKIOLDBREEN	305	2018	100	200	2.61	272	-2584	-2312
SJ	WERENSKIOLDBREEN	305	2018	0	100	0.89	72	-3104	-3032
TJ - Tajikistan									
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	5400	5500	0.31			419
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	5300	5400	0.43			122
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	5200	5300	0.69			-123
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	5100	5200	0.61			-143
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	5000	5100	0.51			-123
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	4900	5000	0.48			-281
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	4800	4900	0.28			-1083
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	4700	4800	0.28			-1286
TJ	EAST ZULMART (GLACIER NO 139)	13493	2019	4600	4700	0.07			-1536
US - United States of America									
US	COLUMBIA (2057)	76	2018	1700	1800	0.04			64
US	COLUMBIA (2057)	76	2018	1650	1700	0.12			156
US	COLUMBIA (2057)	76	2018	1600	1650	0.28			-28
US	COLUMBIA (2057)	76	2018	1550	1600	0.19			-380
US	COLUMBIA (2057)	76	2018	1500	1550	0.11			-319
US	COLUMBIA (2057)	76	2018	1450	1500	0.03			-120
US	COLUMBIA (2057)	76	2019	1700	1800	0.04			300
US	COLUMBIA (2057)	76	2019	1650	1700	0.12			200
US	COLUMBIA (2057)	76	2019	1600	1650	0.28			-1500
US	COLUMBIA (2057)	76	2019	1550	1600	0.18			-2900
US	COLUMBIA (2057)	76	2019	1500	1550	0.09			-4000
US	COLUMBIA (2057)	76	2019	1450	1500	0.02			-4800
US	EASTON	1367	2018	2750	3000	0.06			1600
US	EASTON	1367	2018	2650	2750	0.07			1500
US	EASTON	1367	2018	2550	2650	0.09			1400
US	EASTON	1367	2018	2450	2550	0.15			1200
US	EASTON	1367	2018	2350	2450	0.23			1200
US	EASTON	1367	2018	2250	2350	0.33			600
US	EASTON	1367	2018	2150	2250	0.4			400
US	EASTON	1367	2018	2050	2150	0.41			0
US	EASTON	1367	2018	1950	2050	0.45			-1600
US	EASTON	1367	2018	1850	1950	0.22			-3000
US	EASTON	1367	2018	1750	1850	0.21			-3600
US	EASTON	1367	2018	1650	1750	0.08			-4300
US	EASTON	1367	2019	2750	3000	0.06			1000
US	EASTON	1367	2019	2650	2750	0.07			900
US	EASTON	1367	2019	2550	2650	0.09			600
US	EASTON	1367	2019	2450	2550	0.15			400
US	EASTON	1367	2019	2350	2450	0.23			300
US	EASTON	1367	2019	2250	2350	0.33			100
US	EASTON	1367	2019	2150	2250	0.4			-1100
US	EASTON	1367	2019	2050	2150	0.41			-2100
US	EASTON	1367	2019	1950	2050	0.45			-2800
US	EASTON	1367	2019	1850	1950	0.22			-4200
US	EASTON	1367	2019	1750	1850	0.21			-4800
US	EASTON	1367	2019	1650	1750	0.08			-5300
US	RAINBOW	79	2018	1950	2200	0.38			700
US	RAINBOW	79	2018	1850	1950	0.22			500
US	RAINBOW	79	2018	1750	1850	0.27			200
US	RAINBOW	79	2018	1650	1750	0.22			-900
US	RAINBOW	79	2018	1550	1650	0.19			-2000
US	RAINBOW	79	2018	1450	1550	0.13			-3700
US	RAINBOW	79	2018	1340	1450	0.03			-4600
US	RAINBOW	79	2019	1950	2200	0.38			300
US	RAINBOW	79	2019	1850	1950	0.22			-300
US	RAINBOW	79	2019	1750	1850	0.27			-900
US	RAINBOW	79	2019	1650	1750	0.22			-1600
US	RAINBOW	79	2019	1550	1650	0.19			-2500

PU	GLACIER_NAME	WGMS_ID	YEAR	ELEV_FROM	ELEV_TO	AREA	BW	BS	BA
US	RAINBOW	79	2019	1450	1550	0.13			-4200
US	RAINBOW	79	2019	1340	1450	0.03			-4400

APPENDIX - Table 5

MASS BALANCE POINT DATA 2018–2019

PU	Political unit, alphabetic 2-digit country code (cf. www.iso.org)
GLACIER NAME	Name of the glacier in capital letters, cf. Appendix Table 1
WGMS ID	Key identifier of the glacier, cf. Appendix Table 1
FROM	Starting date measurements in format YYYYMMDD*
TO	Ending date measurements in format YYYYMMDD*
POINT_ID	Key identifier of the measurement point
LAT	Latitude of measurement point in decimal degrees north (positive) or south (negative)
LON	Longitude of measurement point in decimal degrees east (positive) or west (negative)
ELEV	Elevation of the measurement point in metres above sea level
MB	Surface mass balance in mm water equivalent
MB_CODE	BW = Winter balance in mm water equivalent
	BS = Summer balance in mm water equivalent
	BA = Annual balance in mm water equivalent
	IN = Balance at index point

*Unknown month or day are each replaced by „99"

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
AF - Afghanistan										
AF	PIR YAKH	10452	20170707	20180831	PY10	35.5987	70.17995	4541	-3413	IN
AF	PIR YAKH	10452	20170707	20180831	PY20	35.60075	70.1742	4737	-1684	IN
AQ - Antarctica										
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	5			270	0	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	16			505	-130	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	18			551	210	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	2			139	-1230	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	20			553	290	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	21			637	280	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	22			519	270	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	15			445	230	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	4			205	-160	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	17			515	220	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	6			272	-650	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	7			273	160	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	8			288	0	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	9			375	230	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	3			167	-850	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	11			442	240	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	19			588	210	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	12			456	220	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	14			464	420	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	10			398	-120	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	1			100	-1120	BA
AQ	BAHIA DEL DIABLO	2665	20170301	20180228	13			458	200	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	5			205	-410	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	13			445	370	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	14			505	820	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	16			551	180	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	9			442	200	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	8			398	250	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	18			553	170	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	4			167	-410	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	6			270	10	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	20			519	420	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	15			515	180	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	19			637	450	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	12			464	240	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	2			115	-780	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	3			139	-550	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	7			375	90	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	10			456	190	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	17			588	350	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	1			100	-1130	BA
AQ	BAHIA DEL DIABLO	2665	20180301	20190228	11			458	180	BA
AR - Argentina										
AR	MARTIAL ESTE	2000	20170401	20180331	9	-54.78089	-68.40283	1077	-104	BA
AR	MARTIAL ESTE	2000	20170401	20180331	5	-54.78193	-68.40527	1090	398	BA
AR	MARTIAL ESTE	2000	20170401	20180331	1	-54.7814	-68.40158	1032	-342	BA
AR	MARTIAL ESTE	2000	20170401	20180331	6	-54.78144	-68.40492	1095	622	BA
AR	MARTIAL ESTE	2000	20170401	20180331	10	-54.78052	-68.40186	1071	-45	BA
AR	MARTIAL ESTE	2000	20170401	20180331	3	-54.78227	-68.40287	1027	-927	BA
AR	MARTIAL ESTE	2000	20170401	20180331	2	-54.78202	-68.40203	1020	-1521	BA
AR	MARTIAL ESTE	2000	20170401	20180331	4	-54.78205	-68.40423	1065	-475	BA
AR	MARTIAL ESTE	2000	20170401	20180331	11	-54.78126	-68.40544	1113	224	BA
AR	MARTIAL ESTE	2000	20170401	20180331	8	-54.78136	-68.4034	1067	-180	BA
AR	MARTIAL ESTE	2000	20170401	20180331	7	-54.78098	-68.40414	1089	224	BA
AR	MARTIAL ESTE	2000	20170401	20171017	7	-54.78098	-68.40414	1089	1140	BW
AR	MARTIAL ESTE	2000	20170401	20171017	5	-54.78193	-68.40527	1090	1251	BW
AR	MARTIAL ESTE	2000	20170401	20171017	10	-54.78052	-68.40186	1071	666	BW
AR	MARTIAL ESTE	2000	20170401	20171017	8	-54.78136	-68.4034	1067	922	BW
AR	MARTIAL ESTE	2000	20170401	20171017	9	-54.78089	-68.40283	1077	945	BW
AR	MARTIAL ESTE	2000	20170401	20171017	11	-54.78126	-68.40544	1113	1125	BW
AR	MARTIAL ESTE	2000	20170401	20171017	1	-54.7814	-68.40158	1032	609	BW
AR	MARTIAL ESTE	2000	20170401	20171017	3	-54.78227	-68.40287	1027	668	BW
AR	MARTIAL ESTE	2000	20170401	20171017	6	-54.78144	-68.40492	1095	1324	BW
AR	MARTIAL ESTE	2000	20170401	20171017	2	-54.78202	-68.40203	1020	567	BW
AR	MARTIAL ESTE	2000	20170401	20171017	4	-54.78205	-68.40423	1065	860	BW
AR	MARTIAL ESTE	2000	20171017	20180331	9	-54.78089	-68.40283	1077	-1049	BS
AR	MARTIAL ESTE	2000	20171017	20180331	7	-54.78098	-68.40414	1089	-916	BS
AR	MARTIAL ESTE	2000	20171017	20180331	1	-54.7814	-68.40158	1032	-951	BS
AR	MARTIAL ESTE	2000	20171017	20180331	8	-54.78136	-68.4034	1067	-1102	BS
AR	MARTIAL ESTE	2000	20171017	20180331	2	-54.78202	-68.40203	1020	-2088	BS
AR	MARTIAL ESTE	2000	20171017	20180331	11	-54.78126	-68.40544	1113	-901	BS
AR	MARTIAL ESTE	2000	20171017	20180331	6	-54.78144	-68.40492	1095	-703	BS
AR	MARTIAL ESTE	2000	20171017	20180331	4	-54.78205	-68.40423	1065	-1335	BS
AR	MARTIAL ESTE	2000	20171017	20180331	3	-54.78227	-68.40287	1027	-1595	BS
AR	MARTIAL ESTE	2000	20171017	20180331	10	-54.78052	-68.40186	1071	-711	BS
AR	MARTIAL ESTE	2000	20171017	20180331	5	-54.78193	-68.40527	1090	-853	BS
AR	MARTIAL ESTE	2000	20180401	20190321	5	-54.78193	-68.40527	1089	82	BA
AR	MARTIAL ESTE	2000	20180401	20190321	10	-54.78059	-68.40177	1068	-675	BA
AR	MARTIAL ESTE	2000	20180401	20190321	1	-54.7814	-68.40158	1032	-1533	BA
AR	MARTIAL ESTE	2000	20180401	20190321	3	-54.78223	-68.40292	1027	-1246	BA
AR	MARTIAL ESTE	2000	20180401	20190321	6	-54.78142	-68.40493	1095	0	BA
AR	MARTIAL ESTE	2000	20180401	20190321	4	-54.78207	-68.40419	1062	-546	BA
AR	MARTIAL ESTE	2000	20180401	20190321	9	-54.78092	-68.4028	1075	-112	BA
AR	MARTIAL ESTE	2000	20180401	20190321	8	-54.78137	-68.4034	1067	0	BA
AR	MARTIAL ESTE	2000	20180401	20190321	2	-54.78203	-68.40199	1019	-1887	BA
AR	MARTIAL ESTE	2000	20180401	20190321	11	-54.78126	-68.40544	1116	307	BA
AR	MARTIAL ESTE	2000	20180401	20190321	7	-54.78098	-68.40414	1092	292	BA
AR	MARTIAL ESTE	2000	20180401	20181011	7	-54.78098	-68.40414	1092	931	BW
AR	MARTIAL ESTE	2000	20180401	20181011	9	-54.78092	-68.4028	1075	800	BW
AR	MARTIAL ESTE	2000	20180401	20181011	11	-54.78126	-68.40544	1116	1092	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
AR	MARTIAL ESTE	2000	20180401	20181011	2	-54.78203	-68.40199	1019	488	BW
AR	MARTIAL ESTE	2000	20180401	20181011	8	-54.78137	-68.4034	1067	1032	BW
AR	MARTIAL ESTE	2000	20180401	20181011	3	-54.78223	-68.40292	1027	594	BW
AR	MARTIAL ESTE	2000	20180401	20181011	4	-54.78207	-68.40419	1062	752	BW
AR	MARTIAL ESTE	2000	20180401	20181011	5	-54.78193	-68.40527	1089	964	BW
AR	MARTIAL ESTE	2000	20180401	20181011	10	-54.78059	-68.40177	1068	704	BW
AR	MARTIAL ESTE	2000	20180401	20181011	6	-54.78142	-68.40493	1095	980	BW
AR	MARTIAL ESTE	2000	20180401	20181011	1	-54.7814	-68.40158	1032	519	BW
AR	MARTIAL ESTE	2000	20181011	20190321	8	-54.78137	-68.4034	1067	-1032	BS
AR	MARTIAL ESTE	2000	20181011	20190321	7	-54.78098	-68.40414	1092	-639	BS
AR	MARTIAL ESTE	2000	20181011	20190321	1	-54.7814	-68.40158	1032	-2052	BS
AR	MARTIAL ESTE	2000	20181011	20190321	4	-54.78207	-68.40419	1062	-1298	BS
AR	MARTIAL ESTE	2000	20181011	20190321	6	-54.78142	-68.40493	1095	-980	BS
AR	MARTIAL ESTE	2000	20181011	20190321	5	-54.78193	-68.40527	1089	-882	BS
AR	MARTIAL ESTE	2000	20181011	20190321	3	-54.78223	-68.40292	1027	-1840	BS
AR	MARTIAL ESTE	2000	20181011	20190321	2	-54.78203	-68.40199	1019	-2375	BS
AR	MARTIAL ESTE	2000	20181011	20190321	11	-54.78126	-68.40544	1116	-785	BS
AR	MARTIAL ESTE	2000	20181011	20190321	10	-54.78059	-68.40177	1068	-1379	BS
AR	MARTIAL ESTE	2000	20181011	20190321	9	-54.78092	-68.4028	1075	-912	BS
AT - Austria										
AT	HINTEREIS F.	491	20171001	20180930	L7	46.808155	10.777892	2655	-5239	BA
AT	HINTEREIS F.	491	20171001	20180930	TE_B	46.79032	10.749737	3033	-2660	BA
AT	HINTEREIS F.	491	20171001	20180930	p34	46.794536	10.769297	2789	-3175	BA
AT	HINTEREIS F.	491	20171001	20180930	p26	46.800752	10.773573	2743	-4014	BA
AT	HINTEREIS F.	491	20171001	20180930	p25	46.801727	10.768769	2752	-3970	BA
AT	HINTEREIS F.	491	20171001	20180930	p22	46.804934	10.776659	2697	-3736	BA
AT	HINTEREIS F.	491	20171001	20180930	113	46.796851	10.746358	3121	-1556	BA
AT	HINTEREIS F.	491	20171001	20180930	207	46.807742	10.75215	3196	-1764	BA
AT	HINTEREIS F.	491	20171001	20180930	206	46.809274	10.752003	3151	-1591	BA
AT	HINTEREIS F.	491	20171001	20180930	100	46.78699	10.755656	3097	-2260	BA
AT	HINTEREIS F.	491	20171001	20180930	204	46.811146	10.756717	3066	-1859	BA
AT	HINTEREIS F.	491	20171001	20180930	L9	46.812687	10.787375	2544	-7976	BA
AT	HINTEREIS F.	491	20171001	20180930	202	46.811196	10.763132	2933	-1767	BA
AT	HINTEREIS F.	491	20171001	20180930	201	46.810853	10.767976	2838	-5776	BA
AT	HINTEREIS F.	491	20171001	20180930	42	46.809942	10.778712	2632	-5476	BA
AT	HINTEREIS F.	491	20171001	20180930	51	46.806352	10.772263	2705	-3781	BA
AT	HINTEREIS F.	491	20171001	20180930	38	46.811938	10.783418	2579	-5562	BA
AT	HINTEREIS F.	491	20171001	20180930	205	46.808859	10.755581	3116	-1598	BA
AT	HINTEREIS F.	491	20171001	20180930	112	46.797181	10.736514	3285	-1063	BA
AT	HINTEREIS F.	491	20171001	20180930	109	46.797797	10.749272	3133	-1537	BA
AT	HINTEREIS F.	491	20171001	20180930	106	46.795776	10.740138	3194	-2481	BA
AT	HINTEREIS F.	491	20171001	20180930	105	46.793762	10.742379	3128	-2124	BA
AT	HINTEREIS F.	491	20171001	20180930	104	46.792541	10.745708	3085	-2935	BA
AT	HINTEREIS F.	491	20171001	20180930	103	46.791153	10.753551	2976	-1172	BA
AT	HINTEREIS F.	491	20171001	20180930	102	46.796357	10.770873	2830	-2512	BA
AT	HINTEREIS F.	491	20171001	20180930	L8	46.81025	10.782012	2604	-5366	BA
AT	HINTEREIS F.	491	20171001	20180930	101	46.793881	10.752866	2989	-2886	BA
AT	HINTEREIS F.	491	20171001	20180930	41	46.810743	10.78503	2566	-6509	BA
AT	HINTEREIS F.	491	20171001	20180930	94	46.791453	10.757691	2932	-2319	BA
AT	HINTEREIS F.	491	20171001	20180930	203	46.809658	10.759225	3053	-3651	BA
AT	HINTEREIS F.	491	20171001	20180930	27a	46.813913	10.789539	2503	-10793	BA
AT	HINTEREIS F.	491	20171001	20180930	98	46.794082	10.758057	2929	-2188	BA
AT	HINTEREIS F.	491	20171001	20180930	L3	46.792908	10.758919	2916	-2658	BA
AT	HINTEREIS F.	491	20171001	20180930	L4	46.794105	10.764654	2873	-3736	BA
AT	HINTEREIS F.	491	20171001	20180930	89	46.793227	10.762054	2898	-2115	BA
AT	HINTEREIS F.	491	20171001	20180930	88	46.795373	10.767041	2848	-3128	BA
AT	HINTEREIS F.	491	20171001	20180930	87	46.806482	10.775478	2693	-3647	BA
AT	HINTEREIS F.	491	20171001	20180930	L5	46.798166	10.769614	2762	-4231	BA
AT	HINTEREIS F.	491	20171001	20180930	73	46.795007	10.760962	2880	-2514	BA
AT	HINTEREIS F.	491	20171001	20180930	L6	46.803283	10.772843	2730	-4097	BA
AT	HINTEREIS F.	491	20171001	20180930	71	46.79976	10.767879	2780	-3790	BA
AT	HINTEREIS F.	491	20171001	20180930	L10	46.815225	10.791968	2481	-7208	BA
AT	HINTEREIS F.	491	20171001	20180430	26	46.7909	10.7472	3044	1756	BW
AT	HINTEREIS F.	491	20171001	20180430	27	46.7972	10.7429	3150	1923	BW
AT	HINTEREIS F.	491	20171001	20180430	3	46.789	10.7358	3287	1841	BW
AT	HINTEREIS F.	491	20171001	20180430	29	46.7919	10.7348	3341	1732	BW
AT	HINTEREIS F.	491	20171001	20180430	11	46.7939	10.7533	2975	1464	BW
AT	HINTEREIS F.	491	20171001	20180430	28	46.8104	10.7543	3092	1627	BW
AT	HINTEREIS F.	491	20171001	20180430	30	46.8127	10.7874	2613	633	BW
AT	HINTEREIS F.	491	20171001	20180430	12	46.7941	10.7583	2918	1158	BW
AT	HINTEREIS F.	491	20171001	20180430	13	46.7952	10.7643	2864	1218	BW
AT	HINTEREIS F.	491	20171001	20180430	14	46.7957	10.7675	2842	1254	BW
AT	HINTEREIS F.	491	20171001	20180430	16	46.7998	10.7679	2776	1110	BW
AT	HINTEREIS F.	491	20171001	20180430	23	46.8112	10.7569	3066	1646	BW
AT	HINTEREIS F.	491	20171001	20180430	17	46.8018	10.7687	2754	1150	BW
AT	HINTEREIS F.	491	20171001	20180430	18	46.8034	10.7729	2728	1008	BW
AT	HINTEREIS F.	491	20171001	20180430	19	46.8108	10.7683	2838	1047	BW
AT	HINTEREIS F.	491	20171001	20180430	2	46.7903	10.7497	3033	1696	BW
AT	HINTEREIS F.	491	20171001	20180430	20	46.8111	10.7617	3008	1457	BW
AT	HINTEREIS F.	491	20171001	20180430	25	46.8032	10.7728	2738	1149	BW
AT	HINTEREIS F.	491	20171001	20180430	24	46.7915	10.7507	3022	1535	BW
AT	HINTEREIS F.	491	20171001	20180430	21	46.8112	10.7633	2933	1313	BW
AT	HINTEREIS F.	491	20171001	20180430	22	46.8097	10.7593	3053	1673	BW
AT	HINTEREIS F.	491	20171001	20180430	15	46.7977	10.7666	2822	1083	BW
AT	HINTEREIS F.	491	20171001	20180430	49	46.8108	10.7851	2643	292	BW
AT	HINTEREIS F.	491	20171001	20180430	40	46.8077	10.752	3202	2205	BW
AT	HINTEREIS F.	491	20171001	20180430	10	46.7912	10.7541	2966	1475	BW
AT	HINTEREIS F.	491	20171001	20180430	42	46.812	10.7835	2641	501	BW
AT	HINTEREIS F.	491	20171001	20180430	43	46.8095	10.7552	3101	1470	BW
AT	HINTEREIS F.	491	20171001	20180430	44	46.8089	10.7557	3113	1078	BW
AT	HINTEREIS F.	491	20171001	20180430	45	46.8138	10.7896	2591	726	BW
AT	HINTEREIS F.	491	20171001	20180430	46	46.8081	10.778	2709	688	BW
AT	HINTEREIS F.	491	20171001	20180430	1	46.7926	10.7457	3085	1464	BW
AT	HINTEREIS F.	491	20171001	20180430	48	46.81	10.7788	2695	671	BW
AT	HINTEREIS F.	491	20171001	20180430	4	46.787	10.7557	3097	1440	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
AT	HINTEREIS F.	491	20171001	20180430	31	46.8064	10.7724	2740	963	BW
AT	HINTEREIS F.	491	20171001	20180430	5	46.7984	10.7697	2809	1261	BW
AT	HINTEREIS F.	491	20171001	20180430	50	46.8065	10.7755	2735	743	BW
AT	HINTEREIS F.	491	20171001	20180430	6	46.7966	10.771	2819	1181	BW
AT	HINTEREIS F.	491	20171001	20180430	7	46.794	10.7645	2869	1216	BW
AT	HINTEREIS F.	491	20171001	20180430	8	46.7925	10.7632	2888	1389	BW
AT	HINTEREIS F.	491	20171001	20180430	9	46.7915	10.7581	2923	1632	BW
AT	HINTEREIS F.	491	20171001	20180430	47	46.8134	10.789	2597	1100	BW
AT	HINTEREIS F.	491	20171001	20180430	38	46.8084	10.7522	3178	2205	BW
AT	HINTEREIS F.	491	20171001	20180430	32	46.8082	10.7812	2686	303	BW
AT	HINTEREIS F.	491	20171001	20180430	33	46.8104	10.7543	3091	1642	BW
AT	HINTEREIS F.	491	20171001	20180430	34	46.8075	10.7526	3189	1911	BW
AT	HINTEREIS F.	491	20171001	20180430	35	46.8048	10.7768	2739	759	BW
AT	HINTEREIS F.	491	20171001	20180430	41	46.8102	10.782	2668	633	BW
AT	HINTEREIS F.	491	20171001	20180430	37	46.8059	10.7748	2742	908	BW
AT	HINTEREIS F.	491	20171001	20180430	39	46.8093	10.7519	3165	784	BW
AT	HINTEREIS F.	491	20171001	20180430	36	46.8078	10.7524	3185	1764	BW
AT	HINTEREIS F.	491	20181001	20190930	41	46.810948	10.78463	2569	-3555	BA
AT	HINTEREIS F.	491	20181001	20190930	101	46.793881	10.752866	2989	-1491	BA
AT	HINTEREIS F.	491	20181001	20190930	103	46.791153	10.753551	2976	-996	BA
AT	HINTEREIS F.	491	20181001	20190930	104	46.792541	10.745708	3085	-861	BA
AT	HINTEREIS F.	491	20181001	20190930	105	46.793762	10.742379	3128	-777	BA
AT	HINTEREIS F.	491	20181001	20190930	106	46.795776	10.740138	3194	-1077	BA
AT	HINTEREIS F.	491	20181001	20190930	107	46.79904	10.744476	3210	-696	BA
AT	HINTEREIS F.	491	20181001	20190930	L5	46.798166	10.769614	2762	-1899	BA
AT	HINTEREIS F.	491	20181001	20190930	L6	46.803283	10.772843	2730	-2331	BA
AT	HINTEREIS F.	491	20181001	20190930	42	46.809942	10.778712	2632	-3393	BA
AT	HINTEREIS F.	491	20181001	20190930	L7	46.80812	10.777826	2646	-3321	BA
AT	HINTEREIS F.	491	20181001	20190930	22	46.804934	10.776659	2697	-2160	BA
AT	HINTEREIS F.	491	20181001	20190930	94	46.791453	10.757691	2932	-720	BA
AT	HINTEREIS F.	491	20181001	20190930	L8	46.81025	10.782012	2604	-4500	BA
AT	HINTEREIS F.	491	20181001	20190930	L9	46.812687	10.787375	2544	-4275	BA
AT	HINTEREIS F.	491	20181001	20190930	WJ	46.79718	10.742895	3150	377	BA
AT	HINTEREIS F.	491	20181001	20190930	L4	46.794105	10.764654	2873	-972	BA
AT	HINTEREIS F.	491	20181001	20190930	71	46.79976	10.767879	2780	-1593	BA
AT	HINTEREIS F.	491	20181001	20190930	28	46.801902	10.77137	2744	-2097	BA
AT	HINTEREIS F.	491	20181001	20190930	38	46.811938	10.783418	2579	-3168	BA
AT	HINTEREIS F.	491	20181001	20190930	87	46.806482	10.775478	2693	-2214	BA
AT	HINTEREIS F.	491	20181001	20190930	88	46.795373	10.767041	2848	-1782	BA
AT	HINTEREIS F.	491	20181001	20190930	89	46.793227	10.762054	2898	-1683	BA
AT	HINTEREIS F.	491	20181001	20190930	L3	46.792908	10.758919	2916	-1485	BA
AT	HINTEREIS F.	491	20181001	20190930	51	46.806352	10.772263	2705	-2736	BA
AT	HINTEREIS F.	491	20181001	20190430	46	46.792624	10.756782	2945	1420	BW
AT	HINTEREIS F.	491	20181001	20190430	39	46.811415	10.765751	2936	1626	BW
AT	HINTEREIS F.	491	20181001	20190430	3	46.811842	10.784411	2562	837	BW
AT	HINTEREIS F.	491	20181001	20190430	30	46.801895	10.746575	3276	1564	BW
AT	HINTEREIS F.	491	20181001	20190430	31	46.800168	10.74629	3250	1648	BW
AT	HINTEREIS F.	491	20181001	20190430	32	46.799803	10.749339	3232	1639	BW
AT	HINTEREIS F.	491	20181001	20190430	33	46.803034	10.747464	3408	1543	BW
AT	HINTEREIS F.	491	20181001	20190430	48	46.790767	10.748172	3042	1937	BW
AT	HINTEREIS F.	491	20181001	20190430	34	46.807739	10.751129	3286	922	BW
AT	HINTEREIS F.	491	20181001	20190430	36	46.811988	10.760001	3017	1577	BW
AT	HINTEREIS F.	491	20181001	20190430	49	46.788764	10.746024	3111	1918	BW
AT	HINTEREIS F.	491	20181001	20190430	38	46.810648	10.761944	2979	1387	BW
AT	HINTEREIS F.	491	20181001	20190430	27	46.797554	10.736944	3275	1937	BW
AT	HINTEREIS F.	491	20181001	20190430	4	46.811323	10.784774	2564	1260	BW
AT	HINTEREIS F.	491	20181001	20190430	40	46.810988	10.76706	2905	1467	BW
AT	HINTEREIS F.	491	20181001	20190430	41	46.793293	10.77697	3050	1188	BW
AT	HINTEREIS F.	491	20181001	20190430	42	46.791347	10.757278	2931	1432	BW
AT	HINTEREIS F.	491	20181001	20190430	43	46.791928	10.756996	2933	1478	BW
AT	HINTEREIS F.	491	20181001	20190430	44	46.793541	10.756249	2920	1390	BW
AT	HINTEREIS F.	491	20181001	20190430	45	46.794275	10.755932	2944	1460	BW
AT	HINTEREIS F.	491	20181001	20190430	47	46.792424	10.751094	2990	1620	BW
AT	HINTEREIS F.	491	20181001	20190430	37	46.810597	10.75763	3007	1491	BW
AT	HINTEREIS F.	491	20181001	20190430	19	46.795146	10.762512	2813	1248	BW
AT	HINTEREIS F.	491	20181001	20190430	1	46.813093	10.78786	2514	1009	BW
AT	HINTEREIS F.	491	20181001	20190430	10	46.808287	10.777504	2658	1333	BW
AT	HINTEREIS F.	491	20181001	20190430	11	46.809334	10.776699	2650	1254	BW
AT	HINTEREIS F.	491	20181001	20190430	12	46.805203	10.774977	2700	1331	BW
AT	HINTEREIS F.	491	20181001	20190430	13	46.80223	10.769939	2742	1482	BW
AT	HINTEREIS F.	491	20181001	20190430	14	46.800896	10.771834	2744	1423	BW
AT	HINTEREIS F.	491	20181001	20190430	15	46.800016	10.77288	2759	1463	BW
AT	HINTEREIS F.	491	20181001	20190430	16	46.799222	10.771268	2777	1505	BW
AT	HINTEREIS F.	491	20181001	20190430	29	46.800135	10.742388	3271	1937	BW
AT	HINTEREIS F.	491	20181001	20190430	18	46.794537	10.763449	2871	1683	BW
AT	HINTEREIS F.	491	20181001	20190430	28	46.799307	10.738521	3272	1875	BW
AT	HINTEREIS F.	491	20181001	20190430	2	46.812261	10.786378	2539	1254	BW
AT	HINTEREIS F.	491	20181001	20190430	20	46.793472	10.750735	3003	1866	BW
AT	HINTEREIS F.	491	20181001	20190430	21	46.794167	10.748804	3047	1581	BW
AT	HINTEREIS F.	491	20181001	20190430	22	46.794069	10.746679	3106	1817	BW
AT	HINTEREIS F.	491	20181001	20190430	23	46.793691	10.743946	3105	1831	BW
AT	HINTEREIS F.	491	20181001	20190430	24	46.793567	10.741529	3153	1285	BW
AT	HINTEREIS F.	491	20181001	20190430	25	46.794813	10.739071	3210	1582	BW
AT	HINTEREIS F.	491	20181001	20190430	26	46.79599	10.736548	3259	1937	BW
AT	HINTEREIS F.	491	20181001	20190430	35	46.807709	10.748846	3084	1572	BW
AT	HINTEREIS F.	491	20181001	20190430	17	46.79364	10.765031	2851	1576	BW
AT	HINTEREIS F.	491	20181001	20190430	7	46.807477	10.778643	2658	1256	BW
AT	HINTEREIS F.	491	20181001	20190430	8	46.807707	10.778297	2659	1293	BW
AT	HINTEREIS F.	491	20181001	20190430	6	46.810302	10.781568	2598	1338	BW
AT	HINTEREIS F.	491	20181001	20190430	55	46.791685	10.734931	3260	1937	BW
AT	HINTEREIS F.	491	20181001	20190430	53	46.785939	10.756235	3123	1640	BW
AT	HINTEREIS F.	491	20181001	20190430	52	46.790024	10.737075	3275	1937	BW
AT	HINTEREIS F.	491	20181001	20190430	5	46.810884	10.78527	2563	731	BW
AT	HINTEREIS F.	491	20181001	20190430	51	46.789212	10.739352	3237	1603	BW
AT	HINTEREIS F.	491	20181001	20190430	50	46.789375	10.742272	3183	1696	BW
AT	HINTEREIS F.	491	20181001	20190430	9	46.807984	10.777861	2654	1227	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
AT	KESSELWAND F.	507	20171001	20180930	K3	46.836215	10.80128	3019	-3443	BA
AT	KESSELWAND F.	507	20171001	20180930	K18	46.845966	10.782475	3233	-1538	BA
AT	KESSELWAND F.	507	20171001	20180930	K10	46.83907	10.789134	3134	-1908	BA
AT	KESSELWAND F.	507	20171001	20180930	K12	46.845363	10.790645	3176	-1504	BA
AT	KESSELWAND F.	507	20171001	20180930	K14	46.834481	10.791637	3130	-2190	BA
AT	KESSELWAND F.	507	20171001	20180930	K15	46.836601	10.791244	3103	-2275	BA
AT	KESSELWAND F.	507	20171001	20180930	K16	46.842575	10.786217	3183	-1964	BA
AT	KESSELWAND F.	507	20171001	20180930	K17	46.848635	10.789309	3234	-1924	BA
AT	KESSELWAND F.	507	20171001	20180930	KSS1	46.852593	10.783962	3294	142	BA
AT	KESSELWAND F.	507	20171001	20180930	K19	46.853099	10.787017	3287	-1138	BA
AT	KESSELWAND F.	507	20171001	20180930	KSS2	46.848261	10.781863	3251	125	BA
AT	KESSELWAND F.	507	20171001	20180930	K20	46.851033	10.782676	3276	-488	BA
AT	KESSELWAND F.	507	20171001	20180930	K9	46.841571	10.793789	3123	-1969	BA
AT	KESSELWAND F.	507	20171001	20180930	K8	46.839345	10.795314	3086	-2283	BA
AT	KESSELWAND F.	507	20171001	20180930	K6	46.839449	10.79935	3059	-2371	BA
AT	KESSELWAND F.	507	20171001	20180930	K5	46.836962	10.797024	3064	-2728	BA
AT	KESSELWAND F.	507	20171001	20180930	K4	46.834367	10.796514	3083	-3127	BA
AT	KESSELWAND F.	507	20181001	20190930	K4	46.834367	10.796514	3083	-1681	BA
AT	KESSELWAND F.	507	20181001	20190930	K3	46.836215	10.80128	3019	-1825	BA
AT	KESSELWAND F.	507	20181001	20190930	KSS2	46.848261	10.781863	3251	679	BA
AT	KESSELWAND F.	507	20181001	20190930	KSS1	46.852593	10.783962	3294	386	BA
AT	KESSELWAND F.	507	20181001	20190930	K9	46.841571	10.793789	3123	-669	BA
AT	KESSELWAND F.	507	20181001	20190930	K8	46.839345	10.795314	3086	-1020	BA
AT	KESSELWAND F.	507	20181001	20190930	K5	46.836962	10.797024	3064	-1390	BA
AT	KESSELWAND F.	507	20181001	20190930	K12	46.845363	10.790645	3176	-63	BA
AT	KESSELWAND F.	507	20181001	20190930	K10	46.83907	10.789134	3134	-665	BA
AT	KESSELWAND F.	507	20181001	20190930	K14	46.834481	10.791637	3130	-548	BA
AT	KESSELWAND F.	507	20181001	20190930	K19	46.853099	10.787017	3287	85	BA
AT	KESSELWAND F.	507	20181001	20190930	K18	46.845966	10.782475	3233	-104	BA
AT	KESSELWAND F.	507	20181001	20190930	K6	46.839449	10.79935	3059	-1524	BA
AT	KESSELWAND F.	507	20181001	20190930	K17	46.848635	10.789309	3234	0	BA
AT	KESSELWAND F.	507	20181001	20190930	K16	46.842575	10.786217	3183	-440	BA
AT	KESSELWAND F.	507	20181001	20190930	K15	46.836601	10.791244	3103	-1079	BA
AT	KESSELWAND F.	507	20181001	20190930	K20	46.851033	10.782676	3276	679	BA
AT	VERNAGT F.	489	20170930	20180930	164	46.864779	10.809172	2972	-2984	BA
AT	VERNAGT F.	489	20170930	20180930	165	46.869581	10.799198	3127	-2118	BA
AT	VERNAGT F.	489	20170930	20180930	167	46.86426	10.804044	3041	-2385	BA
AT	VERNAGT F.	489	20170930	20180930	169	46.865573	10.808424	2967	-2824	BA
AT	VERNAGT F.	489	20170930	20180930	170	46.864463	10.806478	3006	-2483	BA
AT	VERNAGT F.	489	20170930	20180930	274	46.874229	10.832961	3034	-3107	BA
AT	VERNAGT F.	489	20170930	20180930	273	46.880563	10.819743	3069	-2524	BA
AT	VERNAGT F.	489	20170930	20180930	163	46.871271	10.797868	3165	-2563	BA
AT	VERNAGT F.	489	20170930	20180930	266	46.874577	10.822946	2965	-3876	BA
AT	VERNAGT F.	489	20170930	20180930	158	46.867519	10.807912	2933	-3547	BA
AT	VERNAGT F.	489	20170930	20180930	265	46.873125	10.829153	2964	-3668	BA
AT	VERNAGT F.	489	20170930	20180930	257	46.87185	10.824256	2925	-3991	BA
AT	VERNAGT F.	489	20170930	20180930	254	46.872864	10.822516	2935	-3844	BA
AT	VERNAGT F.	489	20170930	20180930	252	46.870945	10.828584	2924	-4123	BA
AT	VERNAGT F.	489	20170930	20180930	272	46.8746	10.827949	2973	-3256	BA
AT	VERNAGT F.	489	20170930	20180930	278	46.872549	10.836181	3073	-2463	BA
AT	VERNAGT F.	489	20170930	20180930	251	46.871725	10.827467	2934	-4754	BA
AT	VERNAGT F.	489	20170930	20180930	156	46.867398	10.810549	2901	-4124	BA
AT	VERNAGT F.	489	20170930	20180930	142	46.866987	10.812591	2876	-3816	BA
AT	VERNAGT F.	489	20170930	20180930	1040	46.882781	10.842514	3277	-293	BA
AT	VERNAGT F.	489	20170930	20180930	1030	46.887317	10.832152	3252	-161	BA
AT	VERNAGT F.	489	20170930	20180930	160	46.866517	10.804175	3026	-2536	BA
AT	VERNAGT F.	489	20170930	20180930	275	46.874905	10.813366	3009	-3184	BA
AT	VERNAGT F.	489	20170930	20180930	161	46.866964	10.800217	3084	-2276	BA
AT	VERNAGT F.	489	20170930	20180930	281	46.881775	10.811582	3157	-1629	BA
AT	VERNAGT F.	489	20170930	20180930	282	46.874418	10.815992	2965	-4323	BA
AT	VERNAGT F.	489	20170930	20180930	283	46.87804	10.8102	3102	-2758	BA
AT	VERNAGT F.	489	20170930	20180930	285	46.878684	10.824301	3035	-2690	BA
AT	VERNAGT F.	489	20170930	20180930	157	46.866285	10.811155	2913	-3682	BA
AT	VERNAGT F.	489	20170930	20180930	159	46.864073	10.812064	2929	-4324	BA
AT	VERNAGT F.	489	20170930	20180930	1010	46.878526	10.794087	3469	197	BA
AT	VERNAGT F.	489	20180930	20190930	156	46.867407	10.810566	2891	-2350	BA
AT	VERNAGT F.	489	20180930	20190930	160	46.866534	10.804251	3018	-1860	BA
AT	VERNAGT F.	489	20180930	20190930	1020	46.887312	10.832146	3252	42	BA
AT	VERNAGT F.	489	20180930	20190930	275	46.874913	10.813338	3001	-2319	BA
AT	VERNAGT F.	489	20180930	20190930	281	46.881745	10.811573	3152	-1758	BA
AT	VERNAGT F.	489	20180930	20190930	283	46.878004	10.810253	3094	-1907	BA
AT	VERNAGT F.	489	20180930	20190930	285	46.878698	10.824319	3028	-1647	BA
AT	VERNAGT F.	489	20180930	20190930	273	46.880544	10.819736	3062	-1485	BA
AT	VERNAGT F.	489	20180930	20190930	161	46.866984	10.800304	3077	-1445	BA
AT	VERNAGT F.	489	20180930	20190930	274	46.874204	10.833025	3027	-1768	BA
AT	VERNAGT F.	489	20180930	20190930	159	46.864071	10.812054	2929	-1509	BA
AT	VERNAGT F.	489	20180930	20190930	1010	46.878501	10.794127	3467	397	BA
AT	VERNAGT F.	489	20180930	20190930	158	46.867521	10.807893	2925	-1894	BA
AT	VERNAGT F.	489	20180930	20190930	157	46.866264	10.811131	2904	-2264	BA
AT	VERNAGT F.	489	20180930	20190930	142	46.866971	10.812519	2867	-2088	BA
AT	VERNAGT F.	489	20180930	20190930	163	46.871315	10.797837	3159	-1568	BA
AT	VERNAGT F.	489	20180930	20190930	288	46.882464	10.829684	3120	-1437	BA
AT	VERNAGT F.	489	20180930	20190930	164	46.864818	10.809206	2964	-1796	BA
AT	VERNAGT F.	489	20180930	20190930	169	46.865595	10.808458	2960	-1617	BA
AT	VERNAGT F.	489	20180930	20190930	170	46.864482	10.806557	2999	-1600	BA
AT	VERNAGT F.	489	20180930	20190930	251	46.87179	10.827536	2923	-3530	BA
AT	VERNAGT F.	489	20180930	20190930	278	46.872578	10.836211	3067	-2028	BA
AT	VERNAGT F.	489	20180930	20190930	167	46.864242	10.804109	3036	-1384	BA
AT	VERNAGT F.	489	20180930	20190930	168	46.87371	10.792038	3257	-2625	BA
AT	VERNAGT F.	489	20180930	20190930	165	46.869575	10.799196	3127	-1158	BA
AT	VERNAGT F.	489	20180930	20190930	252	46.870989	10.828625	2914	-3379	BA
AT	VERNAGT F.	489	20180930	20190930	254	46.872895	10.822522	2924	-3419	BA
AT	VERNAGT F.	489	20180930	20190930	257	46.87186	10.824258	2914	-3216	BA
AT	VERNAGT F.	489	20180930	20190930	258	46.873022	10.82645	2943	-3025	BA
AT	VERNAGT F.	489	20180930	20190930	1030	46.882736	10.84249	3273	25	BA
AT	VERNAGT F.	489	20180930	20190930	265	46.873123	10.829143	2964	-2986	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
AT	VERNAGT F.	489	20180930	20190930	266	46.874581	10.822933	2955	-2669	BA
AT	VERNAGT F.	489	20180930	20190930	272	46.874618	10.827947	2964	-2395	BA
AT	WURTEN K.	545	20179999	20189999	3	47.03719	13.004198	2568	-3096	BA
AT	WURTEN K.	545	20179999	20189999	12	47.038078	13.006567	2612	-2610	BA
AT	WURTEN K.	545	20179999	20189999	11	47.037652	13.008274	2636	-2862	BA
AT	WURTEN K.	545	20179999	20189999	7	47.03963	13.005064	2610	-3195	BA
AT	WURTEN K.	545	20179999	20189999	5	47.037197	13.005152	2583	-2718	BA
AT	WURTEN K.	545	20179999	20189999	6	47.038602	13.004117	2575	-3537	BA
AT	WURTEN K.	545	20179999	20189999	9	47.038123	13.008522	2641	-2871	BA
AT	WURTEN K.	545	20189999	20199999	12	47.038078	13.006567	2612	-3339	BA
AT	WURTEN K.	545	20189999	20199999	7	47.03963	13.005064	2610	-2520	BA
AT	WURTEN K.	545	20189999	20199999	6	47.038602	13.004117	2575	-3168	BA
AT	WURTEN K.	545	20189999	20199999	3	47.03719	13.004198	2568	-2880	BA
AT	WURTEN K.	545	20189999	20199999	9	47.038123	13.008522	2641	-1863	BA
AT	WURTEN K.	545	20189999	20199999	11	47.037652	13.008274	2636	-2709	BA
AT	WURTEN K.	545	20189999	20199999	5	47.037197	13.005152	2583	-2088	BA
BO - Bolivia										
BO	CHARQUINI SUR	2667	20170831	20180905	42644	-16.30251	-68.10735	5117	-605	BA
BO	CHARQUINI SUR	2667	20170831	20180905	PIT2	-16.30064	-68.10389	5291	1120	BA
BO	CHARQUINI SUR	2667	20170831	20180905	PIT3	-16.30201	-68.10389	5244	742	BA
BO	CHARQUINI SUR	2667	20170831	20180905	9K	-16.30144	-68.10693	5157	-204	BA
BO	CHARQUINI SUR	2667	20170831	20180905	42614	-16.30292	-68.10666	5128	-626	BA
BO	CHARQUINI SUR	2667	20170831	20180905	42583	-16.30056	-68.10737	5165	84	BA
BO	CHARQUINI SUR	2667	20170831	20180905	7K	-16.30204	-68.10485	5211	247	BA
BO	CHARQUINI SUR	2667	20170831	20180905	42675	-16.30292	-68.10771	5095	-1336	BA
BO	CHARQUINI SUR	2667	20170831	20180905	PIT1	-16.30091	-68.10322	5312	807	BA
BO	CHARQUINI SUR	2667	20170831	20180905	0-2017	-16.30331	-68.10636	5126	-688	BA
BO	ZONGO	1503	20170901	20180904	PIT_0	-16.2647	-68.14691	5710	1158	BA
BO	ZONGO	1503	20170901	20180904	PIT_2	-16.26604	-68.14735	5636	1203	BA
BO	ZONGO	1503	20170901	20180904	PIT_3	-16.2681	-68.1459	5560	1185	BA
BO	ZONGO	1503	20170901	20180904	TR-2017	-16.27752	-68.14594	5138	-373	BA
BO	ZONGO	1503	20170901	20180904	X5	-16.27725	-68.14592	5140	303	BA
BO	ZONGO	1503	20170901	20180904	X8-2017	-16.27683	-68.14595	5199	16	BA
BO	ZONGO	1503	20170901	20180904	X7-2016	-16.27633	-68.1465	5249	-118	BA
BO	ZONGO	1503	20170901	20180904	42948	-16.27765	-68.14499	5168	-1155	BA
BO	ZONGO	1503	20170901	20180904	X6 bas	-16.27693	-68.1462	5205	248	BA
BO	ZONGO	1503	20170901	20180904	42522	-16.27796	-68.14086	5090	-657	BA
BO	ZONGO	1503	20170901	20180904	25-2017	-16.27922	-68.13512	4929	-8847	BA
BO	ZONGO	1503	20170901	20180904	24-2017	-16.27925	-68.13567	4947	-7549	BA
BO	ZONGO	1503	20170901	20180904	23-2017	-16.27952	-68.13669	4977	-5213	BA
BO	ZONGO	1503	20170901	20180904	22-2017	-16.2802	-68.13759	5009	-4878	BA
BO	ZONGO	1503	20170901	20180904	20-2017	-16.28062	-68.13929	5050	-3923	BA
BO	ZONGO	1503	20170901	20180904	20-2016	-16.28052	-68.13911	5048	-3769	BA
BO	ZONGO	1503	20170901	20180904	16W	-16.27857	-68.14614	5183	157	BA
BO	ZONGO	1503	20170901	20180904	19-2017	-16.27983	-68.13921	5050	-3620	BA
CA - Canada										
CA	WHITE	0	20171001	20180930	CJA1			1480	234	BA
CA	WHITE	0	20171001	20180930	BLUE			1061	176	BA
CA	WHITE	0	20171001	20180930	JGC1			1518	286	BA
CA	WHITE	0	20171001	20180930	EXTRA			1317	247	BA
CA	WHITE	0	20171001	20180930	CWGEx			612	-567	BA
CA	WHITE	0	20171001	20180930	LP4			1366	352	BA
CA	WHITE	0	20171001	20180930	CGWS			609	-558	BA
CA	WHITE	0	20171001	20180930	BLUE2			1105	111	BA
CA	WHITE	0	20171001	20180930	DCP1			1414	382	BA
CA	WHITE	0	20171001	20180930	WG6			387	-999	BA
CA	WHITE	0	20171001	20180930	LP9			379	-922	BA
CA	WHITE	0	20171001	20180930	QMARK			1160	91	BA
CA	WHITE	0	20171001	20180930	ST2			171	-1467	BA
CA	WHITE	0	20171001	20180930	ST6			293	-1202	BA
CA	WHITE	0	20171001	20180930	WG1A			116	-1845	BA
CA	WHITE	0	20171001	20180930	WG3			149	-1622	BA
CA	WHITE	0	20171001	20180930	LP8			448	-903	BA
CA	WHITE	0	20171001	20180930	WG5A			172	-1467	BA
CA	WHITE	0	20171001	20180930	WG9A			744	-239	BA
CA	WHITE	0	20171001	20180930	WG7			586	-522	BA
CA	WHITE	0	20171001	20180930	WG8			670	-193	BA
CA	WHITE	0	20171001	20180930	WPA1			1443	288	BA
CA	WHITE	0	20171001	20180930	LP10			176	-1600	BA
CA	WHITE	0	20171001	20180930	WPA3			1346	196	BA
CA	WHITE	0	20171001	20180930	WPA4			1265	218	BA
CA	WHITE	0	20171001	20180930	WPA5			1255	213	BA
CA	WHITE	0	20171001	20180930	WG4A			190	-1404	BA
CA	WHITE	0	20171001	20180930	L1			1238	124	BA
CA	WHITE	0	20171001	20180930	WPA2			1418	325	BA
CA	WHITE	0	20171001	20180930	LP6			550	-919	BA
CA	WHITE	0	20171001	20180930	JGC2			1291	190	BA
CA	WHITE	0	20171001	20180930	L15			1055	54	BA
CA	WHITE	0	20171001	20180930	L16			1013	144	BA
CA	WHITE	0	20171001	20180930	L17			944	104	BA
CA	WHITE	0	20171001	20180930	L18			901	72	BA
CA	WHITE	0	20171001	20180930	L19			874	36	BA
CA	WHITE	0	20171001	20180930	L20			865	-86	BA
CA	WHITE	0	20171001	20180930	LP2			1454	362	BA
CA	WHITE	0	20171001	20180930	LP5			702	-252	BA
CH - Switzerland										
CH	ADLER	3801	20180926	20190917	Ag-200	46.01036	7.85877	3081	-2560	BA
CH	ADLER	3801	20180926	20190917	Ag-600	46.01101	7.8731	3339	-850	BA
CH	ADLER	3801	20180926	20190917	Ag-400	46.01112	7.86544	3231	-2420	BA
CH	ADLER	3801	20189999	20190417	Ag-200	46.01036	7.85877	3081	1140	BW
CH	ADLER	3801	20189999	20190417	Ag-600	46.01101	7.8731	3339	1450	BW
CH	ADLER	3801	20189999	20190417	Ag-400	46.01112	7.86544	3231	1120	BW
CH	ALLALIN	394	20170821	20180906	17105	46.04823	7.93292	2856	-4590	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	ALLALIN	394	20170821	20180906	17106	46.03069	7.91774	3372	72	BA
CH	ALLALIN	394	20170821	20180906	17100	46.03975	7.91024	3222	-1476	BA
CH	ALLALIN	394	20170821	20180906	17103	46.04664	7.93375	2824	-3645	BA
CH	ALLALIN	394	20170821	20180906	17102	46.04577	7.93407	2826	-2790	BA
CH	ALLALIN	394	20170821	20180906	17101	46.04468	7.9347	2823	-3420	BA
CH	ALLALIN	394	20170821	20180906	17104	46.04744	7.9333	2839	-3600	BA
CH	ALLALIN	394	20180906	20190830	17100	46.03997	7.91053	3220	-1575	BA
CH	ALLALIN	394	20180906	20190830	18106	46.03065	7.91772	3373	104	BA
CH	ALLALIN	394	20180906	20190830	18105	46.04824	7.93291	2854	-3780	BA
CH	ALLALIN	394	20180906	20190830	18104	46.04743	7.9333	2836	-2700	BA
CH	ALLALIN	394	20180906	20190830	18103	46.04662	7.93375	2822	-2340	BA
CH	ALLALIN	394	20180906	20190830	18102	46.04576	7.93406	2823	-2160	BA
CH	ALLALIN	394	20180906	20190830	18101	46.04468	7.9347	2820	-2700	BA
CH	ALLALIN	394	20180906	20190830	18100	46.03977	7.91026	3221	-1485	BA
CH	ALLALIN	394	20180906	20190830	17102	46.04576	7.93422	2822	-2250	BA
CH	BASODINO	463	20170908	20181026	1712	46.41316	8.47419	3026	-11370	BA
CH	BASODINO	463	20170908	20181026	1710	46.41651	8.49205	2686	-20520	BA
CH	BASODINO	463	20170908	20181026	1708	46.41819	8.47995	2794	-22890	BA
CH	BASODINO	463	20170908	20181026	1706	46.41468	8.48538	2836	-10680	BA
CH	BASODINO	463	20170908	20181026	1705	46.41577	8.47902	2886	-17100	BA
CH	BASODINO	463	20170908	20181026	1704	46.41706	8.47332	2960	-14790	BA
CH	BASODINO	463	20170908	20181026	1703	46.41259	8.48344	2912	-4200	BA
CH	BASODINO	463	20170908	20181026	1702	46.41406	8.47644	2979	-9860	BA
CH	BASODINO	463	20170908	20181026	1701	46.41538	8.47126	3035	-11070	BA
CH	BASODINO	463	20170908	20181026	1709	46.41692	8.48638	2748	-21780	BA
CH	BASODINO	463	20170908	20181026	1707	46.4189	8.47455	2882	-20160	BA
CH	BASODINO	463	20181026	20190917	2	46.41403	8.47642		1480	BA
CH	BASODINO	463	20181026	20190917	7	46.41885	8.47449		-6890	BA
CH	BASODINO	463	20181026	20190917	6	46.41468	8.48536		-1440	BA
CH	BASODINO	463	20181026	20190917	5	46.41578	8.47894		-6480	BA
CH	BASODINO	463	20181026	20190917	4	46.41703	8.47329		770	BA
CH	BASODINO	463	20181026	20190917	8	46.41827	8.47989		-9950	BA
CH	BASODINO	463	20181026	20190917	3	46.41255	8.48346		5190	BA
CH	BASODINO	463	20181026	20190917	9	46.41695	8.4864		-4140	BA
CH	BASODINO	463	20181026	20190917	12	46.4131	8.47421		3340	BA
CH	BASODINO	463	20181026	20190917	10	46.4166	8.49211		-10170	BA
CH	BASODINO	463	20181026	20190917	1	46.41531	8.47122		-2700	BA
CH	BASODINO	463	20189999	20190507	12	46.4131	8.47421		2480	BW
CH	BASODINO	463	20189999	20190507	10	46.4166	8.49211		2205	BW
CH	BASODINO	463	20189999	20190507	3	46.41255	8.48346		2358	BW
CH	BASODINO	463	20189999	20190507	1	46.41531	8.47122		2075	BW
CH	BASODINO	463	20189999	20190507	4	46.41703	8.47329		2444	BW
CH	BASODINO	463	20189999	20190507	5	46.41578	8.47894		2192	BW
CH	BASODINO	463	20189999	20190507	8	46.41827	8.47989		2282	BW
CH	BASODINO	463	20189999	20190507	6	46.41468	8.48536		2520	BW
CH	BASODINO	463	20189999	20190507	9	46.41695	8.4864		2534	BW
CH	BASODINO	463	20189999	20190507	7	46.41885	8.47449		2250	BW
CH	BASODINO	463	20189999	20190507	2	46.41403	8.47642		2507	BW
CH	CLARIDENFIRN	2660	20170923	20181006	16oP	46.84405	8.88863	2890	33	BA
CH	CLARIDENFIRN	2660	20170923	20181006	17uP	46.85531	8.91077	2670	-1342	BA
CH	CLARIDENFIRN	2660	20170923	20180512	16oP	46.84405	8.88863	2890	2504	BW
CH	CLARIDENFIRN	2660	20170923	20180511	17uP	46.85531	8.91077	2670	2384	BW
CH	CLARIDENFIRN	2660	20181006	20190929	18uP	46.85531	8.91077	2670	-1125	BA
CH	CLARIDENFIRN	2660	20181006	20190929	18oP	46.84405	8.88863	2890	449	BA
CH	CLARIDENFIRN	2660	20181006	20190605	18oP	46.84405	8.88863	2890	3157	BW
CH	CLARIDENFIRN	2660	20181006	20190605	18uP	46.85531	8.91077	2670	2524	BW
CH	CORBASSIERE	366	20170921	20180916	17670	45.99433	7.29867	2583	-4581	BA
CH	CORBASSIERE	366	20170921	20180916	17625	45.98859	7.29965	2628	-3933	BA
CH	CORBASSIERE	366	20170921	20180916	17623	45.98939	7.30174	2623	-4005	BA
CH	CORBASSIERE	366	20170921	20180916	17621	45.9903	7.30413	2619	-3690	BA
CH	CORBASSIERE	366	20170922	20180918	17725	45.99941	7.28789	2419	-3600	BA
CH	CORBASSIERE	366	20170922	20180917	17723	45.99979	7.28963	2393	-2493	BA
CH	CORBASSIERE	366	20170922	20180917	17721	46.00029	7.29214	2416	-6318	BA
CH	CORBASSIERE	366	20180917	20190927	18625	45.98854	7.29966	2626	-3951	BA
CH	CORBASSIERE	366	20180917	20190927	18670	45.99428	7.29863	2580	-4509	BA
CH	CORBASSIERE	366	20180917	20190927	18623	45.98938	7.30171	2621	-4302	BA
CH	CORBASSIERE	366	20180917	20190927	18621	45.9903	7.30412	2616	-3789	BA
CH	CORBASSIERE	366	20180918	20190928	17723	45.99981	7.28959	2386	-3375	BA
CH	CORBASSIERE	366	20180918	20190928	18721	46.00026	7.29215	2410	-6210	BA
CH	CORBASSIERE	366	20180918	20190928	18723	45.99977	7.28968	2387	-3627	BA
CH	CORBASSIERE	366	20180918	20190928	18725	45.99924	7.28794	2417	-4023	BA
CH	CORVATSCH SOUTH	4535	20170913	20180916	cor-1013	46.41411	9.82245	3297	-670	BA
CH	CORVATSCH SOUTH	4535	20170913	20180916	cor-217	46.41533	9.82164	3322	-1320	BA
CH	CORVATSCH SOUTH	4535	20170913	20180916	cor-417	46.41745	9.82389	3259	-2380	BA
CH	CORVATSCH SOUTH	4535	20179999	20180407	cor-1013	46.41411	9.82245	3297	1390	BW
CH	CORVATSCH SOUTH	4535	20179999	20180407	cor-217	46.41533	9.82164	3322	1190	BW
CH	CORVATSCH SOUTH	4535	20179999	20180407	cor-417	46.41745	9.82389	3259	570	BW
CH	CORVATSCH SOUTH	4535	20180916	20190921	cor-418	46.41804	9.82463	3242	-2710	BA
CH	CORVATSCH SOUTH	4535	20180916	20190921	cor-618	46.41955	9.82567	3210	-2380	BA
CH	CORVATSCH SOUTH	4535	20180916	20190921	cor-1018	46.4141	9.82236	3303	-1230	BA
CH	CORVATSCH SOUTH	4535	20189999	20190422	cor-418	46.41804	9.82463	3242	670	BW
CH	CORVATSCH SOUTH	4535	20189999	20190422	cor-1018	46.4141	9.82236	3303	1440	BW
CH	CORVATSCH SOUTH	4535	20189999	20190422	cor-618	46.41955	9.82567	3210	730	BW
CH	FINDELEN	389	20170921	20180926	Fi-200	46.00983	7.8319	2605	-7170	BA
CH	FINDELEN	389	20170921	20180926	Fi-500	46.00618	7.85349	2915	-3120	BA
CH	FINDELEN	389	20170921	20180926	Fi-800	45.99543	7.86857	3122	-1580	BA
CH	FINDELEN	389	20170921	20180926	Fi-940	45.98843	7.87246	3258	-1110	BA
CH	FINDELEN	389	20170921	20180926	Fi-300	46.00896	7.83821	2681	-6350	BA
CH	FINDELEN	389	20170921	20180926	Fi-700	45.99973	7.85861	3039	-2570	BA
CH	FINDELEN	389	20170921	20180926	Fi-810	46.00157	7.86934	3150	-2350	BA
CH	FINDELEN	389	20170921	20180926	Fi-400	46.0093	7.84558	2794	-4750	BA
CH	FINDELEN	389	20170921	20180926	Fi-1010	45.99595	7.89161	3345	120	BA
CH	FINDELEN	389	20170921	20180926	Fi-820	45.99441	7.85893	3091	-2300	BA
CH	FINDELEN	389	20170921	20180926	Ag-600	46.01111	7.87335	3340	-880	BA
CH	FINDELEN	389	20170921	20180926	Ag-400	46.0112	7.86574	3236	-2560	BA
CH	FINDELEN	389	20170921	20180926	Fi-910	45.99943	7.88323	3264	-1270	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	FINDELEN	389	20170921	20180926	Ag-200	46.0103	7.85879	3081	-2880	BA
CH	FINDELEN	389	20179999	20180418	Fi-820	45.99441	7.85893	3091	1230	BW
CH	FINDELEN	389	20179999	20180418	Fi-800	45.99543	7.86857	3122	1450	BW
CH	FINDELEN	389	20179999	20180418	Fi-700	45.99973	7.85861	3039	1270	BW
CH	FINDELEN	389	20179999	20180418	Fi-810	46.00157	7.86934	3150	1090	BW
CH	FINDELEN	389	20179999	20180418	Fi-500	46.00618	7.85349	2915	1210	BW
CH	FINDELEN	389	20179999	20180418	Fi-940	45.98843	7.87246	3258	1270	BW
CH	FINDELEN	389	20179999	20180418	Fi-300	46.00896	7.83821	2681	850	BW
CH	FINDELEN	389	20179999	20180418	Fi-200	46.00983	7.8319	2605	760	BW
CH	FINDELEN	389	20179999	20180418	Fi-1010	45.99595	7.89161	3345	1460	BW
CH	FINDELEN	389	20179999	20180418	Ag-600	46.01111	7.87335	3340	1520	BW
CH	FINDELEN	389	20179999	20180418	Ag-400	46.0112	7.86574	3236	1270	BW
CH	FINDELEN	389	20179999	20180418	Ag-200	46.0103	7.85879	3081	1520	BW
CH	FINDELEN	389	20179999	20180418	Fi-400	46.0093	7.84558	2794	1220	BW
CH	FINDELEN	389	20179999	20180418	Fi-910	45.99943	7.88323	3264	1540	BW
CH	FINDELEN	389	20180926	20190917	Fi-1020	45.98126	7.8819	3477	1460	BA
CH	FINDELEN	389	20180926	20190917	Fi-940	45.98867	7.87257	3255	-580	BA
CH	FINDELEN	389	20180926	20190917	Fi-400	46.00935	7.84522	2788	-3930	BA
CH	FINDELEN	389	20180926	20190917	Fi-910	45.99929	7.88276	3258	20	BA
CH	FINDELEN	389	20180926	20190917	Fi-300	46.00895	7.8382	2681	-5880	BA
CH	FINDELEN	389	20180926	20190917	Fi-200	46.00966	7.83344	2619	-5720	BA
CH	FINDELEN	389	20180926	20190917	Fi-820	45.99455	7.85874	3088	-1630	BA
CH	FINDELEN	389	20180926	20190917	Fi-500	46.00597	7.85382	2921	-2000	BA
CH	FINDELEN	389	20180926	20190917	Fi-1010	45.9961	7.89128	3341	440	BA
CH	FINDELEN	389	20180926	20190917	WGMS	46.00968	7.83122	2597	-7080	BA
CH	FINDELEN	389	20180926	20190917	Fi-810	46.00157	7.86934	3150	-1990	BA
CH	FINDELEN	389	20180926	20190917	Fi-800	45.99548	7.86851	3122	-1060	BA
CH	FINDELEN	389	20180926	20190917	Fi-700	45.99999	7.85827	3036	-1840	BA
CH	FINDELEN	389	20189999	20190417	Fi-820	45.99455	7.85874	3088	1200	BW
CH	FINDELEN	389	20189999	20190417	Fi-800	45.99548	7.86851	3122	1440	BW
CH	FINDELEN	389	20189999	20190417	Fi-500	46.00597	7.85382	2921	1280	BW
CH	FINDELEN	389	20189999	20190417	Fi-910	45.99929	7.88276	3258	1660	BW
CH	FINDELEN	389	20189999	20190417	Fi-810	46.00157	7.86934	3150	1370	BW
CH	FINDELEN	389	20189999	20190417	Fi-940	45.98867	7.87257	3255	1400	BW
CH	FINDELEN	389	20189999	20190417	WGMS	46.00968	7.83122	2597	600	BW
CH	FINDELEN	389	20189999	20190417	Fi-1010	45.9961	7.89128	3341	1620	BW
CH	FINDELEN	389	20189999	20190417	Fi-1020	45.98126	7.8819	3477	2050	BW
CH	FINDELEN	389	20189999	20190417	Fi-200	46.00966	7.83344	2619	830	BW
CH	FINDELEN	389	20189999	20190417	Fi-300	46.00895	7.8382	2681	700	BW
CH	FINDELEN	389	20189999	20190417	Fi-400	46.00935	7.84522	2788	990	BW
CH	FINDELEN	389	20189999	20190417	Fi-700	45.99999	7.85827	3036	1360	BW
CH	FINDELEN	389	20190628	20190629	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190629	20190630	1008	7.828609	46.010559	2564	-99	IN
CH	FINDELEN	389	20190630	20190701	1008	7.828609	46.010559	2564	-99	IN
CH	FINDELEN	389	20190701	20190702	1008	7.828609	46.010559	2564	-108	IN
CH	FINDELEN	389	20190702	20190703	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190703	20190704	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190704	20190705	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190705	20190706	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190706	20190707	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190707	20190708	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190708	20190709	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190709	20190710	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190710	20190711	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190711	20190712	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190712	20190713	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190713	20190714	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190714	20190715	1008	7.828609	46.010559	2564	-54	IN
CH	FINDELEN	389	20190716	20190717	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190717	20190718	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190718	20190719	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190719	20190720	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190720	20190721	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190721	20190722	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190722	20190723	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190723	20190724	1008	7.828609	46.010559	2564	-99	IN
CH	FINDELEN	389	20190724	20190725	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190724	20190725	1008	7.828609	46.010559	2564	-108	IN
CH	FINDELEN	389	20190725	20190726	1008	7.828609	46.010559	2564	-108	IN
CH	FINDELEN	389	20190725	20190726	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190726	20190727	1001	7.858164	46.000926	3021	-63	IN
CH	FINDELEN	389	20190726	20190727	1008	7.828609	46.010559	2564	-99	IN
CH	FINDELEN	389	20190727	20190728	1008	7.828609	46.010559	2564	-54	IN
CH	FINDELEN	389	20190727	20190728	1001	7.858164	46.000926	3021	-36	IN
CH	FINDELEN	389	20190728	20190729	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190728	20190729	1001	7.858164	46.000926	3021	-27	IN
CH	FINDELEN	389	20190729	20190731	1008	7.828609	46.010559	2564	-180	IN
CH	FINDELEN	389	20190729	20190730	1001	7.858164	46.000926	3021	-72	IN
CH	FINDELEN	389	20190730	20190731	1001	7.858164	46.000926	3021	-72	IN
CH	FINDELEN	389	20190731	20190801	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190731	20190801	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190801	20190802	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190801	20190802	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190802	20190803	1001	7.858164	46.000926	3021	-18	IN
CH	FINDELEN	389	20190802	20190803	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190803	20190804	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190803	20190804	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190804	20190805	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190804	20190805	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190805	20190806	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190805	20190806	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190806	20190807	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190806	20190807	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190807	20190808	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190807	20190808	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190808	20190809	1008	7.828609	46.010559	2564	-81	IN

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	FINDELEN	389	20190808	20190809	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190809	20190810	1001	7.858164	46.000926	3021	-58	IN
CH	FINDELEN	389	20190809	20190810	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190810	20190811	1001	7.858164	46.000926	3021	-63	IN
CH	FINDELEN	389	20190810	20190811	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190811	20190812	1001	7.858164	46.000926	3021	-63	IN
CH	FINDELEN	389	20190811	20190812	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190812	20190813	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190812	20190813	1001	7.858164	46.000926	3021	-36	IN
CH	FINDELEN	389	20190813	20190814	1001	7.858164	46.000926	3021	-27	IN
CH	FINDELEN	389	20190813	20190814	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190814	20190815	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190814	20190815	1001	7.858164	46.000926	3021	-27	IN
CH	FINDELEN	389	20190815	20190816	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190815	20190816	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190816	20190817	1008	7.828609	46.010559	2564	-54	IN
CH	FINDELEN	389	20190816	20190817	1001	7.858164	46.000926	3021	-36	IN
CH	FINDELEN	389	20190817	20190818	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190817	20190818	1001	7.858164	46.000926	3021	-36	IN
CH	FINDELEN	389	20190818	20190819	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190818	20190819	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190819	20190820	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190819	20190820	1001	7.858164	46.000926	3021	-36	IN
CH	FINDELEN	389	20190820	20190821	1001	7.858164	46.000926	3021	-36	IN
CH	FINDELEN	389	20190820	20190821	1008	7.828609	46.010559	2564	-45	IN
CH	FINDELEN	389	20190821	20190822	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190821	20190822	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190822	20190823	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190822	20190823	1001	7.858164	46.000926	3021	-40	IN
CH	FINDELEN	389	20190823	20190824	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190823	20190824	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190824	20190825	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190824	20190825	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190825	20190826	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190825	20190826	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190826	20190827	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190826	20190827	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190827	20190828	1008	7.828609	46.010559	2564	-81	IN
CH	FINDELEN	389	20190827	20190828	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190828	20190829	1001	7.858164	46.000926	3021	-27	IN
CH	FINDELEN	389	20190828	20190829	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190829	20190830	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190829	20190830	1008	7.828609	46.010559	2564	-90	IN
CH	FINDELEN	389	20190830	20190831	1008	7.828609	46.010559	2564	-108	IN
CH	FINDELEN	389	20190830	20190831	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190831	20190901	1008	7.828609	46.010559	2564	-117	IN
CH	FINDELEN	389	20190831	20190901	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190901	20190902	1008	7.828609	46.010559	2564	-108	IN
CH	FINDELEN	389	20190901	20190902	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190902	20190903	1001	7.858164	46.000926	3021	-45	IN
CH	FINDELEN	389	20190902	20190903	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190903	20190904	1001	7.858164	46.000926	3021	-63	IN
CH	FINDELEN	389	20190903	20190904	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190904	20190905	1008	7.828609	46.010559	2564	-63	IN
CH	FINDELEN	389	20190904	20190905	1001	7.858164	46.000926	3021	-54	IN
CH	FINDELEN	389	20190905	20190906	1008	7.828609	46.010559	2564	-27	IN
CH	FINDELEN	389	20190912	20190913	1008	7.828609	46.010559	2564	-27	IN
CH	FINDELEN	389	20190913	20190914	1008	7.828609	46.010559	2564	-40	IN
CH	FINDELEN	389	20190914	20190915	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190915	20190916	1008	7.828609	46.010559	2564	-72	IN
CH	FINDELEN	389	20190916	20190917	1008	7.828609	46.010559	2564	-72	IN
CH	GIETRO	367	20170921	20180917	1701	45.98267	7.38887	3298	24	BA
CH	GIETRO	367	20170921	20180916	1704	45.99215	7.38974	3184	-666	BA
CH	GIETRO	367	20170921	20180916	1702	45.98707	7.39482	3246	186	BA
CH	GIETRO	367	20170921	20180916	1705	45.99903	7.38217	3051	-2286	BA
CH	GIETRO	367	20170921	20180916	17102	46.00221	7.36926	2817	-5184	BA
CH	GIETRO	367	20170921	20180916	17103	46.00169	7.36748	2764	-2592	BA
CH	GIETRO	367	20170921	20180916	17107	46.00249	7.37197	2907	-4563	BA
CH	GIETRO	367	20180917	20190927	18101	46.00236	7.3707	2866	-2241	BA
CH	GIETRO	367	20180917	20190927	1805	45.99904	7.38217	3050	-2799	BA
CH	GIETRO	367	20180917	20190927	18102	46.00217	7.36913	2808	-4770	BA
CH	GIETRO	367	20180917	20190927	18107	46.00255	7.37229	2917	-4122	BA
CH	GIETRO	367	20180917	20190927	1702	45.98714	7.3948	3246	-595	BA
CH	GIETRO	367	20180917	20190927	1701	45.98268	7.38888	3297	-1284	BA
CH	GIETRO	367	20180917	20190927	1704	45.99224	7.38965	3183	-1584	BA
CH	GRIES	359	20170907	20181005	101-17	46.43534	8.32226	2989	-1510	BA
CH	GRIES	359	20170907	20181005	41-17	46.44829	8.34428	2551	-4180	BA
CH	GRIES	359	20170907	20181005	82-17	46.43735	8.33592	2874	-1850	BA
CH	GRIES	359	20170907	20181005	112-17	46.43197	8.3174	3025	-1080	BA
CH	GRIES	359	20170907	20181005	111-17	46.43328	8.31638	3031	-1990	BA
CH	GRIES	359	20170907	20181005	61-17	46.44266	8.3412	2666	-3590	BA
CH	GRIES	359	20170907	20181005	52-17	46.445	8.34131	2594	-3530	BA
CH	GRIES	359	20170907	20181005	102-17	46.43422	8.32448	2986	-1530	BA
CH	GRIES	359	20170907	20181005	51-17	46.44515	8.33988	2601	-3830	BA
CH	GRIES	359	20170907	20181005	42-17	46.44829	8.34428	2551	-3750	BA
CH	GRIES	359	20170907	20181005	22-17	46.45071	8.35323	2489	-6070	BA
CH	GRIES	359	20170907	20181005	71-17	46.43973	8.34141	2768	-1570	BA
CH	GRIES	359	20170907	20181005	81-17	46.43848	8.33358	2886	-2370	BA
CH	GRIES	359	20170907	20181005	32-17	46.44974	8.35033	2518	-4730	BA
CH	GRIES	359	20170907	20181005	31-17	46.45081	8.34951	2524	-4980	BA
CH	GRIES	359	20170907	20181005	113-17	46.43094	8.31831	3029	-1130	BA
CH	GRIES	359	20170907	20181005	91-17	46.43741	8.32788	2935	-2380	BA
CH	GRIES	359	20170907	20181005	92-17	46.43597	8.32884	2933	-1800	BA
CH	GRIES	359	20170907	20181005	21-17	46.45241	8.35297	2493	-5460	BA
CH	GRIES	359	20179999	20180417	82-17	46.43735	8.33592	2874	2010	BW
CH	GRIES	359	20179999	20180417	81-17	46.43848	8.33358	2886	1820	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	GRIES	359	20179999	20180417	71-17	46.43973	8.34141	2768	1970	BW
CH	GRIES	359	20179999	20180417	102-17	46.43422	8.32448	2986	2160	BW
CH	GRIES	359	20179999	20180417	111-17	46.43328	8.31638	3031	2330	BW
CH	GRIES	359	20179999	20180417	113-17	46.43094	8.31831	3029	2400	BW
CH	GRIES	359	20179999	20180417	101-17	46.43534	8.32226	2989	2290	BW
CH	GRIES	359	20179999	20180417	52-17	46.445	8.34131	2594	1910	BW
CH	GRIES	359	20179999	20180417	112-17	46.43197	8.3174	3025	2460	BW
CH	GRIES	359	20179999	20180417	92-17	46.43597	8.32884	2933	2270	BW
CH	GRIES	359	20179999	20180417	41-17	46.44829	8.34428	2551	1490	BW
CH	GRIES	359	20179999	20180417	51-17	46.44515	8.33988	2601	1700	BW
CH	GRIES	359	20179999	20180417	31-17	46.45081	8.34951	2524	1490	BW
CH	GRIES	359	20179999	20180417	61-17	46.44266	8.3412	2666	1760	BW
CH	GRIES	359	20179999	20180417	91-17	46.43741	8.32788	2935	2010	BW
CH	GRIES	359	20179999	20180417	21-17	46.45241	8.35297	2493	1400	BW
CH	GRIES	359	20179999	20180417	32-17	46.44974	8.35033	2518	1590	BW
CH	GRIES	359	20179999	20180417	22-17	46.45071	8.35323	2489	1490	BW
CH	GRIES	359	20179999	20180417	42-17	46.44829	8.34428	2551	1490	BW
CH	GRIES	359	20181005	20190909	gr21-18	46.45221	8.35239	2502	-2520	BA
CH	GRIES	359	20181005	20190909	gr112-18	46.43176	8.31733	3026	-200	BA
CH	GRIES	359	20181005	20190909	gr101-17	46.43541	8.32171	2991	-360	BA
CH	GRIES	359	20181005	20190909	gr92-18	46.43607	8.32862	2937	-750	BA
CH	GRIES	359	20181005	20190909	gr42-18	46.44678	8.34426	2551	-2650	BA
CH	GRIES	359	20181005	20190909	gr111-18	46.43303	8.31585	3032	-790	BA
CH	GRIES	359	20181005	20190909	gr41-18	46.44842	8.34343	2553	-2210	BA
CH	GRIES	359	20181005	20190909	gr61-18	46.44251	8.34127	2673	-1970	BA
CH	GRIES	359	20181005	20190909	gr22-18	46.45035	8.35263	2498	-3560	BA
CH	GRIES	359	20181005	20190909	gr81-18	46.43849	8.33299	2891	-910	BA
CH	GRIES	359	20181005	20190909	gr31-18	46.45075	8.34897	2526	-2580	BA
CH	GRIES	359	20181005	20190909	gr82-17	46.43757	8.33587	2872	-810	BA
CH	GRIES	359	20181005	20190909	gr113-18	46.43095	8.3184	3029	-130	BA
CH	GRIES	359	20181005	20190909	gr71-18	46.43971	8.3409	2771	-750	BA
CH	GRIES	359	20181005	20190909	gr51-18	46.44503	8.33962	2601	-1970	BA
CH	GRIES	359	20181005	20190909	gr32-18	46.44973	8.34967	2522	-3180	BA
CH	GRIES	359	20181005	20190909	gr91-18	46.4374	8.32797	2935	-1150	BA
CH	GRIES	359	20181005	20190909	gr102-18	46.43425	8.32428	2986	-460	BA
CH	GRIES	359	20181005	20190909	gr52-18	46.44486	8.34139	2600	-2270	BA
CH	GRIES	359	20189999	20190415	gr41-18	46.44842	8.34343	2553	1320	BW
CH	GRIES	359	20189999	20190415	gr31-18	46.45075	8.34897	2526	1630	BW
CH	GRIES	359	20189999	20190415	gr42-18	46.44678	8.34426	2551	1430	BW
CH	GRIES	359	20189999	20190415	gr32-18	46.44973	8.34967	2522	1430	BW
CH	GRIES	359	20189999	20190415	gr21-18	46.45221	8.35239	2502	950	BW
CH	GRIES	359	20189999	20190415	gr92-18	46.43607	8.32862	2937	2070	BW
CH	GRIES	359	20189999	20190415	gr91-18	46.4374	8.32797	2935	1960	BW
CH	GRIES	359	20189999	20190415	gr102-18	46.43425	8.32428	2986	2020	BW
CH	GRIES	359	20189999	20190415	gr112-18	46.43176	8.31733	3026	2230	BW
CH	GRIES	359	20189999	20190415	gr111-18	46.43303	8.31585	3032	1930	BW
CH	GRIES	359	20189999	20190415	gr113-18	46.43095	8.3184	3029	2120	BW
CH	GRIES	359	20189999	20190415	gr51-18	46.44503	8.33962	2601	1710	BW
CH	GRIES	359	20189999	20190415	gr52-18	46.44486	8.34139	2600	1570	BW
CH	GRIES	359	20189999	20190415	gr61-18	46.44251	8.34127	2673	1520	BW
CH	GRIES	359	20189999	20190415	gr82-17	46.43757	8.33587	2872	2210	BW
CH	GRIES	359	20189999	20190415	gr22-18	46.45035	8.35263	2498	1450	BW
CH	GRIES	359	20189999	20190415	gr81-18	46.43849	8.33299	2891	1910	BW
CH	GRIES	359	20189999	20190415	gr71-18	46.43971	8.3409	2771	2190	BW
CH	GRIES	359	20189999	20190415	gr101-17	46.43541	8.32171	2991	2020	BW
CH	HOHLAUB	3332	20170821	20180906	17110	46.05686	7.92194	3026	-1638	BA
CH	HOHLAUB	3332	20180906	20190830	18110	46.05688	7.92195	3026	-2466	BA
CH	MURTEL VADRET DAL	4339	20170913	20180916	mur-417	46.40727	9.82131	3219	-810	BA
CH	MURTEL VADRET DAL	4339	20170913	20180916	mur-117	46.41077	9.8282	3102	-3060	BA
CH	MURTEL VADRET DAL	4339	20170913	20180916	mur-217	46.40939	9.82647	3140	-1820	BA
CH	MURTEL VADRET DAL	4339	20170913	20180916	mur-317	46.4089	9.82459	3177	-1550	BA
CH	MURTEL VADRET DAL	4339	20170913	20180916	mur-613	46.40668	9.823	3200	-980	BA
CH	MURTEL VADRET DAL	4339	20170913	20180916	mur-717	46.40849	9.82277	3196	-1030	BA
CH	MURTEL VADRET DAL	4339	20179999	20180407	mur-417	46.40727	9.82131	3219	1330	BW
CH	MURTEL VADRET DAL	4339	20179999	20180407	mur-613	46.40668	9.823	3200	1250	BW
CH	MURTEL VADRET DAL	4339	20179999	20180407	mur-217	46.40939	9.82647	3140	1220	BW
CH	MURTEL VADRET DAL	4339	20179999	20180407	mur-117	46.41077	9.8282	3102	1070	BW
CH	MURTEL VADRET DAL	4339	20179999	20180407	mur-717	46.40849	9.82277	3196	1310	BW
CH	MURTEL VADRET DAL	4339	20179999	20180407	mur-317	46.4089	9.82459	3177	1560	BW
CH	MURTEL VADRET DAL	4339	20180916	20190921	mur-618	46.40666	9.82304	3200	-1160	BA
CH	MURTEL VADRET DAL	4339	20180916	20190921	mur-318	46.40892	9.8247	3175	-1940	BA
CH	MURTEL VADRET DAL	4339	20180916	20190921	mur-218	46.40937	9.82647	3140	-1770	BA
CH	MURTEL VADRET DAL	4339	20180916	20190921	mur-118	46.4108	9.82821	3100	-3370	BA
CH	MURTEL VADRET DAL	4339	20180916	20190921	mur-717	46.40849	9.82277	3196	-790	BA
CH	MURTEL VADRET DAL	4339	20180916	20190921	mur-418	46.40725	9.82129	3219	-860	BA
CH	MURTEL VADRET DAL	4339	20189999	20190422	mur-418	46.40725	9.82129	3219	1530	BW
CH	MURTEL VADRET DAL	4339	20189999	20190422	mur-218	46.40937	9.82647	3140	1340	BW
CH	MURTEL VADRET DAL	4339	20189999	20190422	mur-118	46.4108	9.82821	3100	750	BW
CH	MURTEL VADRET DAL	4339	20189999	20190422	mur-717	46.40849	9.82277	3196	1400	BW
CH	MURTEL VADRET DAL	4339	20189999	20190422	mur-618	46.40666	9.82304	3200	1360	BW
CH	MURTEL VADRET DAL	4339	20189999	20190422	mur-318	46.40892	9.8247	3175	830	BW
CH	OBERAAR	451	20171010	20181009	OA2	46.5363	8.2248	2330	-4518	IN
CH	PIZOL	417	20170929	20181016	pz-915	46.95874	9.38941	2716	-1780	BA
CH	PIZOL	417	20170929	20181016	pz-617	46.95861	9.39036	2709	-1220	BA
CH	PIZOL	417	20170929	20181016	pz-117	46.95971	9.38986	2672	-2760	BA
CH	PIZOL	417	20170929	20181016	pz-217	46.95951	9.38893	2694	-2250	BA
CH	PIZOL	417	20170929	20181016	pz-417	46.96061	9.38878	2661	-2680	BA
CH	PIZOL	417	20170929	20181016	pz-517	46.96029	9.38831	2678	-2490	BA
CH	PIZOL	417	20179999	20180324	pz-417	46.96061	9.38878	2661	1710	BW
CH	PIZOL	417	20179999	20180324	pz-217	46.95951	9.38893	2694	2100	BW
CH	PIZOL	417	20179999	20180324	pz-517	46.96029	9.38831	2678	2080	BW
CH	PIZOL	417	20179999	20180324	pz-617	46.95861	9.39036	2709	2370	BW
CH	PIZOL	417	20179999	20180324	pz-915	46.95874	9.38941	2716	2310	BW
CH	PIZOL	417	20179999	20180324	pz-117	46.95971	9.38986	2672	1730	BW
CH	PIZOL	417	20181016	20190922	pz-917	46.95874	9.38941	2716	-580	BA
CH	PIZOL	417	20181016	20190922	pz-118	46.95965	9.38979	2675	-1270	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	PIZOL	417	20181016	20190922	pz-218	46.9595	9.38897	2694	-1020	BA
CH	PIZOL	417	20181016	20190922	pz-418	46.96059	9.38868	2665	-1480	BA
CH	PIZOL	417	20181016	20190922	pz-618	46.95859	9.39024	2711	-480	BA
CH	PIZOL	417	20181016	20190922	pz-518	46.96012	9.38817	2683	-550	BA
CH	PIZOL	417	20189999	20190330	pz-218	46.9595	9.38897	2694	1650	BW
CH	PIZOL	417	20189999	20190330	pz-917	46.95874	9.38941	2716	1490	BW
CH	PIZOL	417	20189999	20190330	pz-418	46.96059	9.38868	2665	1920	BW
CH	PIZOL	417	20189999	20190330	pz-118	46.95965	9.38979	2675	1300	BW
CH	PIZOL	417	20189999	20190330	pz-518	46.96012	9.38817	2683	1900	BW
CH	PIZOL	417	20189999	20190330	pz-618	46.95859	9.39024	2711	1370	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20171011	20180930	plm1-17n	46.37804	7.48829	2700	-2450	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20171011	20180930	plm3-15	46.38038	7.51044	2719	-1750	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20171011	20180930	plm5-17	46.38618	7.50386	2668	-2160	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20171011	20180930	plm4-17	46.37884	7.52993	2749	-1680	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20171011	20180930	plm6-17	46.38091	7.49595	2688	-2340	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20179999	20180406	plm5-17	46.38618	7.50386	2668	2170	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20179999	20180406	plm3-15	46.38038	7.51044	2719	2350	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20179999	20180406	plm1-17n	46.37804	7.48829	2700	2350	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20179999	20180406	plm6-17	46.38091	7.49595	2688	2270	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20179999	20180406	plm4-17	46.37884	7.52993	2749	2230	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20180930	20190930	plm5-17	46.3862	7.50384	2663	-1690	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20180930	20190930	plm6-17	46.38092	7.49593	2683	-1860	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20180930	20190930	plm1-17n	46.37806	7.48826	2695	-2020	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20180930	20190930	plm4-18	46.38435	7.52963	2753	-1470	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20180930	20190930	plm3-18	46.38039	7.51041	2715	-1530	BA
CH	PLAINE MORTE, GLACIER DE LA	4630	20189999	20190402	plm1-17n	46.37806	7.48826	2695	1590	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20189999	20190402	plm5-17	46.3862	7.50384	2663	1590	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20189999	20190402	plm6-17	46.38092	7.49593	2683	1610	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20189999	20190402	plm3-18	46.38039	7.51041	2715	1630	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20189999	20190402	plm4-18	46.38435	7.52963	2753	1540	BW
CH	PLAINE MORTE, GLACIER DE LA	4630	20190810	20190811	1003	7.495938	46.380854	2681	-63	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190811	20190812	1003	7.495938	46.380854	2681	-72	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190812	20190813	1003	7.495938	46.380854	2681	-36	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190813	20190814	1003	7.495938	46.380854	2681	-32	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190814	20190815	1003	7.495938	46.380854	2681	-27	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190815	20190816	1003	7.495938	46.380854	2681	-36	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190816	20190817	1003	7.495938	46.380854	2681	-36	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190817	20190818	1003	7.495938	46.380854	2681	-45	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190818	20190819	1003	7.495938	46.380854	2681	-72	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190819	20190820	1003	7.495938	46.380854	2681	-54	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190820	20190821	1003	7.495938	46.380854	2681	-27	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190821	20190822	1003	7.495938	46.380854	2681	-54	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190822	20190901	1003	7.495938	46.380854	2681	-459	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190901	20190902	1003	7.495938	46.380854	2681	-27	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190902	20190903	1003	7.495938	46.380854	2681	-27	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190903	20190904	1003	7.495938	46.380854	2681	-45	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190904	20190905	1003	7.495938	46.380854	2681	-54	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190915	20190916	1003	7.495938	46.380854	2681	-36	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190916	20190917	1003	7.495938	46.380854	2681	-18	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190917	20190918	1003	7.495938	46.380854	2681	-27	IN
CH	PLAINE MORTE, GLACIER DE LA	4630	20190918	20190919	1003	7.495938	46.380854	2681	-18	IN
CH	RHONE	473	20170926	20180912	1707	46.58887	8.38669	2350	-5760	BA
CH	RHONE	473	20170926	20180912	1705	46.60461	8.3852	2599	-4518	BA
CH	RHONE	473	20170926	20180912	1712	46.62312	8.39831	2841	-1413	BA
CH	RHONE	473	20170926	20180912	1710	46.58186	8.38503	2216	-5724	BA
CH	RHONE	473	20170926	20180912	1708	46.58484	8.38693	2285	-5238	BA
CH	RHONE	473	20170926	20180912	1706	46.59493	8.38375	2460	-3600	BA
CH	RHONE	473	20170926	20180912	1709	46.58283	8.38592	2235	-6156	BA
CH	RHONE	473	20170926	20180912	1603	46.63116	8.39334	2924	-629	BA
CH	RHONE	473	20170926	20180912	1704	46.61208	8.39633	2743	-2169	BA
CH	RHONE	473	20170926	20180912	1702	46.64028	8.3988	3110	484	BA
CH	RHONE	473	20170926	20180911	1701	46.6467	8.40282	3235	1261	BA
CH	RHONE	473	20170926	20180829	1723	46.58674	8.38729	2311	-5607	BA
CH	RHONE	473	20170926	20180424	1712	46.62312	8.39831	2841	2320	BW
CH	RHONE	473	20170926	20180424	1603	46.63116	8.39334	2924	2500	BW
CH	RHONE	473	20170926	20180424	1701	46.6467	8.40282	3235	3105	BW
CH	RHONE	473	20170926	20180424	1702	46.64028	8.3988	3110	2985	BW
CH	RHONE	473	20170926	20180424	1723	46.58674	8.38729	2311	895	BW
CH	RHONE	473	20170926	20180424	1710	46.58186	8.38503	2216	1150	BW
CH	RHONE	473	20170926	20180424	1709	46.58283	8.38592	2235	1050	BW
CH	RHONE	473	20170926	20180424	1708	46.58484	8.38693	2285	1125	BW
CH	RHONE	473	20170926	20180424	1707	46.58887	8.38669	2350	800	BW
CH	RHONE	473	20170926	20180424	1704	46.61208	8.39633	2743	1980	BW
CH	RHONE	473	20170926	20180424	1706	46.59493	8.38375	2460	833	BW
CH	RHONE	473	20170926	20180424	1705	46.60461	8.3852	2599	573	BW
CH	RHONE	473	20180912	20190912	1808	46.58484	8.3869	2280	-4932	BA
CH	RHONE	473	20180912	20190912	k02	46.58217	8.38586	2222	-6831	BA
CH	RHONE	473	20180912	20190912	1823	46.58676	8.38728	2306	-5760	BA
CH	RHONE	473	20180912	20190912	1804	46.61216	8.39637	2742	-1602	BA
CH	RHONE	473	20180912	20190912	1803	46.63156	8.39323	2925	432	BA
CH	RHONE	473	20180912	20190912	1812	46.62311	8.39827	2839	-747	BA
CH	RHONE	473	20180912	20190912	1802	46.6405	8.39887	3113	428	BA
CH	RHONE	473	20180912	20190912	1805	46.6045	8.38521	2595	-4347	BA
CH	RHONE	473	20180912	20190912	1809	46.58283	8.38596	2229	-6318	BA
CH	RHONE	473	20180912	20190912	1806	46.595	8.38375	2458	-5805	BA
CH	RHONE	473	20180912	20190912	1801	46.64669	8.40284	3234	1300	BA
CH	RHONE	473	20180912	20190912	1807	46.58888	8.38669	2345	-5715	BA
CH	RHONE	473	20180912	20190326	1823	46.58676	8.38728	2306	1210	BW
CH	RHONE	473	20180912	20190326	1802	46.6405	8.39887	3113	2059	BW
CH	RHONE	473	20180912	20190326	1801	46.64669	8.40284	3234	2414	BW
CH	RHONE	473	20180912	20190326	1803	46.63156	8.39323	2925	2304	BW
CH	RHONE	473	20180912	20190326	1804	46.61216	8.39637	2742	1987	BW
CH	RHONE	473	20180912	20190326	1805	46.6045	8.38521	2595	976	BW
CH	RHONE	473	20180912	20190326	1812	46.62311	8.39827	2839	2184	BW
CH	RHONE	473	20180912	20190326	1806	46.595	8.38375	2458	833	BW
CH	RHONE	473	20180912	20190326	1807	46.58888	8.38669	2345	1115	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	RHONE	473	20180912	20190326	1808	46.58484	8.3869	2280	1271	BW
CH	RHONE	473	20180912	20190326	1809	46.58283	8.38596	2229	1111	BW
CH	RHONE	473	20190728	20190729	1002	8.386621	46.583032	2238	-45	IN
CH	RHONE	473	20190728	20190729	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190729	20190730	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190729	20190730	1007	8.384916	46.60416	2589	-81	IN
CH	RHONE	473	20190730	20190731	1007	8.384916	46.60416	2589	-81	IN
CH	RHONE	473	20190730	20190731	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190731	20190801	1007	8.384916	46.60416	2589	-63	IN
CH	RHONE	473	20190731	20190801	1002	8.386621	46.583032	2238	-81	IN
CH	RHONE	473	20190801	20190802	1007	8.384916	46.60416	2589	-63	IN
CH	RHONE	473	20190801	20190802	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190802	20190803	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190802	20190803	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190803	20190804	1002	8.386621	46.583032	2238	-81	IN
CH	RHONE	473	20190803	20190804	1007	8.384916	46.60416	2589	-72	IN
CH	RHONE	473	20190804	20190805	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190804	20190805	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190805	20190806	1002	8.386621	46.583032	2238	-72	IN
CH	RHONE	473	20190805	20190806	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190806	20190807	1002	8.386621	46.583032	2238	-72	IN
CH	RHONE	473	20190806	20190807	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190807	20190808	1002	8.386621	46.583032	2238	-45	IN
CH	RHONE	473	20190807	20190808	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190808	20190809	1007	8.384916	46.60416	2589	-68	IN
CH	RHONE	473	20190808	20190809	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190809	20190810	1002	8.386621	46.583032	2238	-99	IN
CH	RHONE	473	20190809	20190810	1007	8.384916	46.60416	2589	-72	IN
CH	RHONE	473	20190810	20190811	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190810	20190811	1002	8.386621	46.583032	2238	-72	IN
CH	RHONE	473	20190811	20190812	1007	8.384916	46.60416	2589	-63	IN
CH	RHONE	473	20190811	20190812	1002	8.386621	46.583032	2238	-63	IN
CH	RHONE	473	20190812	20190813	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190812	20190813	1007	8.384916	46.60416	2589	-40	IN
CH	RHONE	473	20190813	20190815	1002	8.386621	46.583032	2238	-94	IN
CH	RHONE	473	20190813	20190814	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190814	20190815	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190814	20190815	1009	8.386151	46.583347	2233	-54	IN
CH	RHONE	473	20190815	20190816	1006	8.383484	46.590536	2392	-54	IN
CH	RHONE	473	20190815	20190816	1002	8.386621	46.583032	2238	-45	IN
CH	RHONE	473	20190815	20190816	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190815	20190816	1007	8.384916	46.60416	2589	-27	IN
CH	RHONE	473	20190816	20190817	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190816	20190817	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190816	20190817	1002	8.386621	46.583032	2238	-63	IN
CH	RHONE	473	20190816	20190817	1009	8.386151	46.583347	2233	-90	IN
CH	RHONE	473	20190817	20190818	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190817	20190818	1009	8.386151	46.583347	2233	-81	IN
CH	RHONE	473	20190817	20190818	1002	8.386621	46.583032	2238	-81	IN
CH	RHONE	473	20190817	20190818	1007	8.384916	46.60416	2589	-27	IN
CH	RHONE	473	20190818	20190819	1006	8.383484	46.590536	2392	-81	IN
CH	RHONE	473	20190818	20190819	1009	8.386151	46.583347	2233	-108	IN
CH	RHONE	473	20190818	20190819	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190818	20190819	1007	8.384916	46.60416	2589	-63	IN
CH	RHONE	473	20190819	20190820	1007	8.384916	46.60416	2589	-72	IN
CH	RHONE	473	20190819	20190820	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190819	20190820	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190819	20190820	1002	8.386621	46.583032	2238	-72	IN
CH	RHONE	473	20190820	20190821	1006	8.383484	46.590536	2392	-45	IN
CH	RHONE	473	20190820	20190821	1002	8.386621	46.583032	2238	-36	IN
CH	RHONE	473	20190820	20190821	1009	8.386151	46.583347	2233	-45	IN
CH	RHONE	473	20190820	20190821	1007	8.384916	46.60416	2589	-18	IN
CH	RHONE	473	20190821	20190822	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190821	20190822	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190821	20190822	1002	8.386621	46.583032	2238	-63	IN
CH	RHONE	473	20190821	20190822	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190822	20190823	1009	8.386151	46.583347	2233	-81	IN
CH	RHONE	473	20190822	20190823	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190822	20190823	1002	8.386621	46.583032	2238	-81	IN
CH	RHONE	473	20190822	20190823	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190823	20190824	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190823	20190824	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190823	20190824	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190823	20190824	1002	8.386621	46.583032	2238	-72	IN
CH	RHONE	473	20190824	20190825	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190824	20190825	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190824	20190825	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190824	20190825	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190825	20190826	1002	8.386621	46.583032	2238	-72	IN
CH	RHONE	473	20190825	20190826	1007	8.384916	46.60416	2589	-63	IN
CH	RHONE	473	20190825	20190826	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190825	20190826	1009	8.386151	46.583347	2233	-81	IN
CH	RHONE	473	20190826	20190827	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190826	20190827	1002	8.386621	46.583032	2238	-81	IN
CH	RHONE	473	20190826	20190827	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190826	20190827	1009	8.386151	46.583347	2233	-90	IN
CH	RHONE	473	20190827	20190828	1006	8.383484	46.590536	2392	-81	IN
CH	RHONE	473	20190827	20190828	1002	8.386621	46.583032	2238	-81	IN
CH	RHONE	473	20190827	20190828	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190827	20190828	1009	8.386151	46.583347	2233	-90	IN
CH	RHONE	473	20190828	20190829	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190828	20190829	1006	8.383484	46.590536	2392	-58	IN
CH	RHONE	473	20190828	20190829	1002	8.386621	46.583032	2238	-45	IN
CH	RHONE	473	20190828	20190829	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190829	20190830	1006	8.383484	46.590536	2392	-54	IN
CH	RHONE	473	20190829	20190830	1002	8.386621	46.583032	2238	-72	IN

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	RHONE	473	20190829	20190830	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190829	20190830	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190830	20190831	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190830	20190831	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190830	20190831	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190830	20190831	1009	8.386151	46.583347	2233	-99	IN
CH	RHONE	473	20190831	20190901	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190831	20190901	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190831	20190901	1009	8.386151	46.583347	2233	-81	IN
CH	RHONE	473	20190831	20190901	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190901	20190902	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190901	20190902	1009	8.386151	46.583347	2233	-90	IN
CH	RHONE	473	20190901	20190902	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190901	20190902	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190902	20190903	1006	8.383484	46.590536	2392	-36	IN
CH	RHONE	473	20190902	20190903	1009	8.386151	46.583347	2233	-45	IN
CH	RHONE	473	20190902	20190903	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190902	20190903	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190903	20190904	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190903	20190904	1006	8.383484	46.590536	2392	-54	IN
CH	RHONE	473	20190903	20190904	1009	8.386151	46.583347	2233	-45	IN
CH	RHONE	473	20190903	20190904	1002	8.386621	46.583032	2238	-76	IN
CH	RHONE	473	20190904	20190905	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190904	20190905	1002	8.386621	46.583032	2238	-50	IN
CH	RHONE	473	20190904	20190905	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190904	20190905	1006	8.383484	46.590536	2392	-50	IN
CH	RHONE	473	20190905	20190906	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190905	20190906	1006	8.383484	46.590536	2392	-30	IN
CH	RHONE	473	20190905	20190906	1009	8.386151	46.583347	2233	-27	IN
CH	RHONE	473	20190907	20190908	1002	8.386621	46.583032	2238	-26	IN
CH	RHONE	473	20190907	20190908	1009	8.386151	46.583347	2233	-36	IN
CH	RHONE	473	20190909	20190910	1009	8.386151	46.583347	2233	-9	IN
CH	RHONE	473	20190909	20190910	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190910	20190911	1002	8.386621	46.583032	2238	-14	IN
CH	RHONE	473	20190910	20190911	1009	8.386151	46.583347	2233	-14	IN
CH	RHONE	473	20190911	20190912	1009	8.386151	46.583347	2233	-36	IN
CH	RHONE	473	20190911	20190912	1002	8.386621	46.583032	2238	-40	IN
CH	RHONE	473	20190911	20190912	1006	8.383484	46.590536	2392	-45	IN
CH	RHONE	473	20190912	20190913	1002	8.386621	46.583032	2238	-45	IN
CH	RHONE	473	20190912	20190913	1009	8.386151	46.583347	2233	-68	IN
CH	RHONE	473	20190912	20190913	1006	8.383484	46.590536	2392	-45	IN
CH	RHONE	473	20190912	20190913	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190913	20190914	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190913	20190914	1009	8.386151	46.583347	2233	-76	IN
CH	RHONE	473	20190913	20190914	1002	8.386621	46.583032	2238	-63	IN
CH	RHONE	473	20190913	20190914	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190914	20190915	1006	8.383484	46.590536	2392	-58	IN
CH	RHONE	473	20190914	20190915	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190914	20190915	1009	8.386151	46.583347	2233	-81	IN
CH	RHONE	473	20190914	20190915	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190915	20190916	1006	8.383484	46.590536	2392	-72	IN
CH	RHONE	473	20190915	20190916	1002	8.386621	46.583032	2238	-90	IN
CH	RHONE	473	20190915	20190916	1009	8.386151	46.583347	2233	-90	IN
CH	RHONE	473	20190915	20190916	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190916	20190917	1006	8.383484	46.590536	2392	-63	IN
CH	RHONE	473	20190916	20190917	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190916	20190917	1009	8.386151	46.583347	2233	-72	IN
CH	RHONE	473	20190916	20190917	1002	8.386621	46.583032	2238	-99	IN
CH	RHONE	473	20190917	20190918	1006	8.383484	46.590536	2392	-81	IN
CH	RHONE	473	20190917	20190918	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190917	20190918	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190917	20190918	1002	8.386621	46.583032	2238	-63	IN
CH	RHONE	473	20190918	20190919	1007	8.384916	46.60416	2589	-45	IN
CH	RHONE	473	20190918	20190919	1006	8.383484	46.590536	2392	-45	IN
CH	RHONE	473	20190918	20190919	1002	8.386621	46.583032	2238	-54	IN
CH	RHONE	473	20190918	20190919	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190919	20190920	1002	8.386621	46.583032	2238	-36	IN
CH	RHONE	473	20190919	20190920	1007	8.384916	46.60416	2589	-54	IN
CH	RHONE	473	20190919	20190920	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190919	20190920	1006	8.383484	46.590536	2392	-36	IN
CH	RHONE	473	20190920	20190921	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190920	20190921	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190920	20190921	1007	8.384916	46.60416	2589	-40	IN
CH	RHONE	473	20190920	20190921	1006	8.383484	46.590536	2392	-36	IN
CH	RHONE	473	20190921	20190922	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190921	20190922	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190921	20190922	1009	8.386151	46.583347	2233	-63	IN
CH	RHONE	473	20190921	20190922	1006	8.383484	46.590536	2392	-27	IN
CH	RHONE	473	20190922	20190923	1009	8.386151	46.583347	2233	-54	IN
CH	RHONE	473	20190922	20190923	1006	8.383484	46.590536	2392	-27	IN
CH	RHONE	473	20190922	20190923	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190922	20190923	1007	8.384916	46.60416	2589	-32	IN
CH	RHONE	473	20190923	20190924	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190923	20190924	1009	8.386151	46.583347	2233	-27	IN
CH	RHONE	473	20190924	20190925	1002	8.386621	46.583032	2238	-18	IN
CH	RHONE	473	20190924	20190925	1006	8.383484	46.590536	2392	-18	IN
CH	RHONE	473	20190924	20190925	1009	8.386151	46.583347	2233	-32	IN
CH	RHONE	473	20190925	20190926	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190925	20190926	1006	8.383484	46.590536	2392	-14	IN
CH	RHONE	473	20190925	20190926	1009	8.386151	46.583347	2233	-22	IN
CH	RHONE	473	20190926	20190927	1009	8.386151	46.583347	2233	-22	IN
CH	RHONE	473	20190926	20190927	1002	8.386621	46.583032	2238	-18	IN
CH	RHONE	473	20190926	20190927	1006	8.383484	46.590536	2392	-9	IN
CH	RHONE	473	20190927	20190928	1002	8.386621	46.583032	2238	-63	IN
CH	RHONE	473	20190927	20190928	1009	8.386151	46.583347	2233	-54	IN
CH	RHONE	473	20190927	20190928	1006	8.383484	46.590536	2392	-32	IN

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	RHONE	473	20190928	20190929	1002	8.386621	46.583032	2238	-18	IN
CH	RHONE	473	20190928	20190929	1007	8.384916	46.60416	2589	-18	IN
CH	RHONE	473	20190928	20190929	1006	8.383484	46.590536	2392	-27	IN
CH	RHONE	473	20190928	20190929	1009	8.386151	46.583347	2233	-58	IN
CH	RHONE	473	20190929	20190930	1007	8.384916	46.60416	2589	-36	IN
CH	RHONE	473	20190929	20190930	1006	8.383484	46.590536	2392	-32	IN
CH	RHONE	473	20190929	20190930	1002	8.386621	46.583032	2238	-18	IN
CH	RHONE	473	20190929	20190930	1009	8.386151	46.583347	2233	-54	IN
CH	RHONE	473	20190930	20191001	1007	8.384916	46.60416	2589	-27	IN
CH	RHONE	473	20190930	20191001	1009	8.386151	46.583347	2233	-54	IN
CH	RHONE	473	20190930	20191001	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20190930	20191001	1006	8.383484	46.590536	2392	-32	IN
CH	RHONE	473	20191001	20191002	1007	8.384916	46.60416	2589	-27	IN
CH	RHONE	473	20191001	20191002	1009	8.386151	46.583347	2233	-27	IN
CH	RHONE	473	20191001	20191002	1006	8.383484	46.590536	2392	-27	IN
CH	RHONE	473	20191001	20191002	1002	8.386621	46.583032	2238	-36	IN
CH	RHONE	473	20191002	20191003	1006	8.383484	46.590536	2392	-22	IN
CH	RHONE	473	20191002	20191003	1002	8.386621	46.583032	2238	-27	IN
CH	RHONE	473	20191002	20191003	1009	8.386151	46.583347	2233	-27	IN
CH	SANKT ANNA	432	20170924	20180920	sta-316	46.59935	8.60152	2701	-2080	BA
CH	SANKT ANNA	432	20170924	20180920	sta-1115	46.59742	8.60518	2816	-1000	BA
CH	SANKT ANNA	432	20170924	20180920	sta-917	46.60067	8.60134	2649	-2860	BA
CH	SANKT ANNA	432	20170924	20180920	sta-817	46.59634	8.59836	2856	-540	BA
CH	SANKT ANNA	432	20170924	20180920	sta-115	46.5969	8.60139	2782	-1880	BA
CH	SANKT ANNA	432	20170924	20180920	sta-717	46.59957	8.60047	2689	-2540	BA
CH	SANKT ANNA	432	20170924	20180920	sta-417	46.60003	8.60169	2680	-3280	BA
CH	SANKT ANNA	432	20170924	20180920	sta-217	46.59821	8.6014	2737	-1190	BA
CH	SANKT ANNA	432	20179999	20180419	sta-917	46.60067	8.60134	2649	1240	BW
CH	SANKT ANNA	432	20179999	20180419	sta-1115	46.59742	8.60518	2816	2690	BW
CH	SANKT ANNA	432	20179999	20180419	sta-115	46.5969	8.60139	2782	820	BW
CH	SANKT ANNA	432	20179999	20180419	sta-217	46.59821	8.6014	2737	1630	BW
CH	SANKT ANNA	432	20179999	20180419	sta-316	46.59935	8.60152	2701	1450	BW
CH	SANKT ANNA	432	20179999	20180419	sta-417	46.60003	8.60169	2680	1490	BW
CH	SANKT ANNA	432	20179999	20180419	sta-717	46.59957	8.60047	2689	1470	BW
CH	SANKT ANNA	432	20179999	20180419	sta-817	46.59634	8.59836	2856	2550	BW
CH	SANKT ANNA	432	20180920	20190919	sta-217	46.59821	8.6014	2737	-320	BA
CH	SANKT ANNA	432	20180920	20190919	sta-817	46.59634	8.59836	2856	-750	BA
CH	SANKT ANNA	432	20180920	20190919	sta-717	46.59957	8.60047	2689	-1010	BA
CH	SANKT ANNA	432	20180920	20190919	sta-118	46.5965	8.60082	2806	-340	BA
CH	SANKT ANNA	432	20180920	20190919	sta-1115	46.59742	8.60518	2816	-110	BA
CH	SANKT ANNA	432	20180920	20190919	sta-418	46.60011	8.6017	2676	-2030	BA
CH	SANKT ANNA	432	20180920	20190919	sta-318	46.59934	8.60158	2701	-780	BA
CH	SANKT ANNA	432	20189999	20190510	sta-118	46.5965	8.60082	2806	2650	BW
CH	SANKT ANNA	432	20189999	20190510	sta-1115	46.59742	8.60518	2816	2680	BW
CH	SANKT ANNA	432	20189999	20190510	sta-217	46.59821	8.6014	2737	2480	BW
CH	SANKT ANNA	432	20189999	20190510	sta-817	46.59634	8.59836	2856	2480	BW
CH	SANKT ANNA	432	20189999	20190510	sta-717	46.59957	8.60047	2689	2360	BW
CH	SANKT ANNA	432	20189999	20190510	sta-318	46.59934	8.60158	2701	1910	BW
CH	SANKT ANNA	432	20189999	20190510	sta-418	46.60011	8.6017	2676	1820	BW
CH	SCHWARZBACH	4340	20170924	20180920	swz-117	46.59645	8.61208	2762	-2960	BA
CH	SCHWARZBACH	4340	20170924	20180920	swz-217	46.59602	8.61014	2806	-1580	BA
CH	SCHWARZBACH	4340	20179999	20180419	swz-217	46.59602	8.61014	2806	3250	BW
CH	SCHWARZBACH	4340	20179999	20180419	swz-117	46.59645	8.61208	2762	2730	BW
CH	SCHWARZBACH	4340	20180920	20190919	swz-118	46.59642	8.61212	2765	-910	BA
CH	SCHWARZBACH	4340	20180920	20190919	swz-217	46.59611	8.61014	2803	200	BA
CH	SCHWARZBACH	4340	20189999	20190510	swz-217	46.59611	8.61014	2803	2920	BW
CH	SCHWARZBACH	4340	20189999	20190510	swz-118	46.59642	8.61212	2765	2520	BW
CH	SCHWARZBERG	395	20170821	20180906	17124	46.0073	7.93005	2981	-1737	BA
CH	SCHWARZBERG	395	20170821	20180906	17120	46.01644	7.93342	2846	-2745	BA
CH	SCHWARZBERG	395	20170821	20180906	17123	46.02102	7.93611	2765	-3636	BA
CH	SCHWARZBERG	395	20180906	20190830	18120	46.01644	7.9334	2844	-2655	BA
CH	SCHWARZBERG	395	20180906	20190830	18123	46.02101	7.93608	2762	-2961	BA
CH	SCHWARZBERG	395	20180906	20190830	18124	46.00739	7.92999	2979	-1359	BA
CH	SEX ROUGE	454	20170908	20180913	ser4-17	46.32966	7.21525	2772	-2450	BA
CH	SEX ROUGE	454	20170908	20180913	ser6-17	46.3275	7.21633	2835	-1390	BA
CH	SEX ROUGE	454	20170908	20180913	ser2-17	46.3272	7.21411	2804	-1160	BA
CH	SEX ROUGE	454	20179999	20180425	ser4-17	46.32966	7.21525	2772	1320	BW
CH	SEX ROUGE	454	20179999	20180425	ser2-17	46.3272	7.21411	2804	2370	BW
CH	SEX ROUGE	454	20179999	20180425	ser6-17	46.3275	7.21633	2835	2390	BW
CH	SEX ROUGE	454	20180913	20190915	ser2-18	46.3272	7.21411	2804	-1800	BA
CH	SEX ROUGE	454	20180913	20190915	ser4-18	46.32966	7.21525	2772	-2460	BA
CH	SEX ROUGE	454	20180913	20190915	ser6-18	46.3275	7.21633	2835	-1530	BA
CH	SEX ROUGE	454	20189999	20190501	ser2-18	46.3272	7.21411	2804	1870	BW
CH	SEX ROUGE	454	20189999	20190501	ser4-18	46.32966	7.21525	2772	1450	BW
CH	SEX ROUGE	454	20189999	20190501	ser6-18	46.3275	7.21633	2835	2100	BW
CH	SILVRETTA	408	20170929	20180910	1617	46.85597	10.08073	2767	-1044	BA
CH	SILVRETTA	408	20170929	20180910	1504	46.85421	10.08423	2812	-1377	BA
CH	SILVRETTA	408	20170929	20180908	1518	46.85372	10.07153	2678	-1766	BA
CH	SILVRETTA	408	20170929	20180908	1611	46.8507	10.07089	2712	-1548	BA
CH	SILVRETTA	408	20170929	20180908	1615	46.8486	10.07656	2846	-1756	BA
CH	SILVRETTA	408	20170929	20180908	1716	46.85198	10.07909	2759	-1614	BA
CH	SILVRETTA	408	20170929	20180908	1713	46.85459	10.06126	2521	-3482	BA
CH	SILVRETTA	408	20170929	20180908	1709	46.85577	10.05793	2483	-3044	BA
CH	SILVRETTA	408	20170929	20180908	1712	46.85421	10.06695	2580	-2513	BA
CH	SILVRETTA	408	20170929	20180908	1708	46.85581	10.05948	2508	-2553	BA
CH	SILVRETTA	408	20170929	20180908	1706	46.8569	10.06851	2606	-2549	BA
CH	SILVRETTA	408	20170929	20180908	1505	46.85496	10.07563	2707	-1667	BA
CH	SILVRETTA	408	20170929	20180519	1518	46.85373	10.0715	2677	1382	BW
CH	SILVRETTA	408	20170929	20180519	1505	46.855	10.07562	2713	1436	BW
CH	SILVRETTA	408	20170930	20180910	1701	46.84606	10.08536	2975	-804	BA
CH	SILVRETTA	408	20170930	20180910	1703	46.85114	10.0849	2887	426	BA
CH	SILVRETTA	408	20170930	20180910	1710	46.84691	10.08117	2928	-974	BA
CH	SILVRETTA	408	20170930	20180910	1702	46.8487	10.08656	2950	-1129	BA
CH	SILVRETTA	408	20170930	20180908	1707	46.85682	10.06392	2553	-2715	BA
CH	SILVRETTA	408	20180908	20190920	1805	46.85492	10.07575	2707	-1719	BA
CH	SILVRETTA	408	20180908	20190920	1806	46.85691	10.0685	2603	-2835	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CH	SILVRETTA	408	20180908	20190920	1807	46.85684	10.06391	2550	-2925	BA
CH	SILVRETTA	408	20180908	20190920	1808	46.8558	10.05949	2504	-3258	BA
CH	SILVRETTA	408	20180908	20190920	1809	46.85578	10.05799	2479	-5832	BA
CH	SILVRETTA	408	20180908	20190920	1811	46.85069	10.07087	2710	-1854	BA
CH	SILVRETTA	408	20180908	20190920	1812	46.85421	10.06697	2578	-2826	BA
CH	SILVRETTA	408	20180908	20190920	1815	46.84858	10.0766	2845	-1836	BA
CH	SILVRETTA	408	20180908	20190920	1818	46.85366	10.07163	2677	-1683	BA
CH	SILVRETTA	408	20180908	20190920	1816	46.85199	10.0791	2758	-1548	BA
CH	SILVRETTA	408	20180908	20190920	1813	46.85458	10.0613	2518	-4095	BA
CH	SILVRETTA	408	20180910	20190921	1710	46.84692	10.08114	2926	-864	BA
CH	SILVRETTA	408	20180910	20190921	1801	46.84606	10.08536	2973	-712	BA
CH	SILVRETTA	408	20180910	20190921	1802	46.84865	10.08665	2950	-888	BA
CH	SILVRETTA	408	20180910	20190921	1703	46.85117	10.08486	2884	-160	BA
CH	SILVRETTA	408	20180910	20190921	1810	46.84684	10.08133	2929	-855	BA
CH	SILVRETTA	408	20180910	20190920	1617	46.85598	10.08069	2765	-1647	BA
CH	SILVRETTA	408	20180910	20190920	1804	46.85422	10.08429	2811	-1264	BA
CH	SILVRETTA	408	20189999	20190525	5	46.85492	10.07573	2707	2121	BW
CH	SILVRETTA	408	20189999	20190525	18	46.85368	10.07163	2681	2045	BW
CH	SILVRETTA	408	20189999	20190525	9	46.85578	10.05786	2482	1884	BW
CH	SILVRETTA	408	20189999	20190525	8	46.85579	10.05939	2507	1995	BW
CH	SILVRETTA	408	20189999	20190525	6	46.8569	10.06851	2606	2010	BW
CH	SILVRETTA	408	20189999	20190525	34	46.85795	10.06574	2568	2237	BW
CH	SILVRETTA	408	20189999	20190525	4	46.85419	10.08432	2806	2454	BW
CH	SILVRETTA	408	20189999	20190525	39	46.85543	10.05714	2472	2071	BW
CH	SILVRETTA	408	20189999	20190525	38	46.85629	10.05713	2480	1894	BW
CH	SILVRETTA	408	20189999	20190525	37	46.85451	10.05972	2497	1833	BW
CH	SILVRETTA	408	20189999	20190525	36	46.85716	10.06108	2515	2374	BW
CH	SILVRETTA	408	20189999	20190525	2	46.84868	10.08663	2937	2086	BW
CH	SILVRETTA	408	20189999	20190525	35	46.85529	10.06489	2555	2020	BW
CH	SILVRETTA	408	20189999	20190525	7	46.85685	10.06393	2553	2030	BW
CH	SILVRETTA	408	20189999	20190525	1	46.84607	10.08529	2978	2222	BW
CH	SILVRETTA	408	20189999	20190525	3	46.85078	10.08483	2871	2065	BW
CH	SILVRETTA	408	20189999	20190525	17	46.85598	10.08076	2764	2374	BW
CH	SILVRETTA	408	20189999	20190525	10	46.84688	10.08129	2931	2187	BW
CH	SILVRETTA	408	20189999	20190525	11	46.85069	10.07085	2714	2222	BW
CH	SILVRETTA	408	20189999	20190525	12	46.8542	10.06695	2580	2096	BW
CH	SILVRETTA	408	20189999	20190525	13	46.85458	10.06134	2519	1843	BW
CH	SILVRETTA	408	20189999	20190525	15	46.84855	10.07653	2849	1843	BW
CH	SILVRETTA	408	20189999	20190525	16	46.85199	10.07912	2766	2237	BW
CH	TSANFLEURON	371	20170908	20181010	ts4-17	46.32428	7.23056	2718	-2550	BA
CH	TSANFLEURON	371	20170908	20181010	ts1-17	46.3225	7.22486	2756	-2030	BA
CH	TSANFLEURON	371	20170908	20181010	ts2-15	46.31716	7.21686	2851	-1560	BA
CH	TSANFLEURON	371	20170908	20181010	ts3-17	46.31508	7.22341	2805	-1840	BA
CH	TSANFLEURON	371	20170908	20181010	ts6-17	46.32456	7.24008	2611	-3800	BA
CH	TSANFLEURON	371	20170908	20181010	ts5-17	46.32167	7.23432	2685	-3420	BA
CH	TSANFLEURON	371	20179999	20180425	ts5-17	46.32167	7.23432	2685	2340	BW
CH	TSANFLEURON	371	20179999	20180425	ts2-15	46.31716	7.21686	2851	2440	BW
CH	TSANFLEURON	371	20179999	20180425	ts3-17	46.31508	7.22341	2805	2720	BW
CH	TSANFLEURON	371	20179999	20180425	ts1-17	46.3225	7.22486	2756	2670	BW
CH	TSANFLEURON	371	20179999	20180425	ts4-17	46.32428	7.23056	2718	2770	BW
CH	TSANFLEURON	371	20179999	20180425	ts6-17	46.32456	7.24008	2611	2420	BW
CH	TSANFLEURON	371	20181010	20190915	ts6-18	46.32452	7.24006	2611	-2630	BA
CH	TSANFLEURON	371	20181010	20190915	ts5-18	46.3216	7.23393	2692	-2330	BA
CH	TSANFLEURON	371	20181010	20190915	ts4-18	46.32427	7.23036	2721	-1180	BA
CH	TSANFLEURON	371	20181010	20190915	ts3-17	46.31508	7.22341	2805	-880	BA
CH	TSANFLEURON	371	20181010	20190915	ts2-18	46.31714	7.21686	2851	-1000	BA
CH	TSANFLEURON	371	20181010	20190915	ts1-17	46.3225	7.22486	2756	-900	BA
CH	TSANFLEURON	371	20189999	20190501	ts6-18	46.32452	7.24006	2611	1950	BW
CH	TSANFLEURON	371	20189999	20190501	ts5-18	46.3216	7.23393	2692	1970	BW
CH	TSANFLEURON	371	20189999	20190501	ts3-17	46.31508	7.22341	2805	1700	BW
CH	TSANFLEURON	371	20189999	20190501	ts2-18	46.31714	7.21686	2851	1750	BW
CH	TSANFLEURON	371	20189999	20190501	ts1-17	46.3225	7.22486	2756	2220	BW
CH	TSANFLEURON	371	20189999	20190501	ts4-18	46.32427	7.23036	2721	2220	BW
CL - Chile										
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B14	-39.947	-72.016	1919	590	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B8	-39.945	-72.004	1887	-2000	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B10	-39.949	-72.007	1881	-1780	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B11	-39.945	-72.001	1811	-1790	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B15	-39.942	-72.009	1918	-970	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B17	-39.935	-72.015	2032	410	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B2	-39.931	-72.028	2393	450	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B19	-39.942	-72.03	2022	1200	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B18	-39.942	-72.019	1982	-120	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B13	-39.951	-72.019	1917	-1280	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B1	-39.932	-72.027	2392	270	BA
CL	MOCHO CHOSHUENCO SE	3972	20170412	20180503	B12	-39.952	-72.012	1817	-2450	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B2	-39.931	-72.028	2393	340	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B12	-39.952	-72.012	1817	-610	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B13	-39.951	-72.019	1917	-450	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B14	-39.947	-72.016	1919	310	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B15	-39.947	-72.016	1919	-450	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B8	-39.945	-72.004	1887	-620	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B10	-39.949	-72.007	1881	-310	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B19	-39.942	-72.019	1982	520	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B18	-39.935	-72.015	2032	300	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B17	-39.942	-72.009	1918	260	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B1	-39.932	-72.027	2392	20	BA
CL	MOCHO CHOSHUENCO SE	3972	20180503	20190505	B11	-39.945	-72.001	1811	-530	BA
CN - China										
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-D3	43.1108	86.8111	3914	-734	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-G3	43.1058	86.8086	4034	-604	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-H3	43.1052	86.8075	4053	-574	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-H1	43.1064	86.8047	3991	-847	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-G2	43.1065	86.8076	4019	-805	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-G1	43.1069	86.8065	4021	-779	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-F3	43.1072	86.8099	4003	-220	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-F2	43.1075	86.8082	4004	-969	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-F1	43.1079	86.807	3998	-757	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-E3	43.1085	86.8106	3971	-206	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-E2	43.1091	86.8091	3956	-742	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-E1	43.1096	86.8077	3954	-741	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-D2	43.1117	86.8096	3899	-1414	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-C3	43.1128	86.813	3882	-1436	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-C1	43.1144	86.8106	3867	-1457	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-B3	43.115	86.8136	3828	-2676	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-B2	43.1154	86.8132	3830	-2272	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-B1	43.1159	86.8126	3833	-2015	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-A1	43.116	86.8143	3797	-2509	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-C2	43.1136	86.8117	3876	-1547	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-D1	43.1121	86.8086	3900	-1231	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20170827	20180828	E-H2	43.1056	86.8062	3990	-153	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-F3	43.1078	86.8094	3993	132	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-D1	43.1127	86.8081	3887	-875	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-D2	43.1123	86.8092	3884	-1118	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-D3	43.1115	86.8107	3902	-482	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-E1	43.1102	86.8073	3942	-405	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-E2	43.1097	86.8087	3943	-426	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-E3	43.1091	86.8101	3963	98	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-F2	43.1082	86.8078	3979	-402	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-B3	43.1156	86.8133	3806	-1975	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-G1	43.1075	86.8061	4008	-543	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-G2	43.1071	86.8071	4005	-188	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-H1	43.1063	86.8046	4037	-566	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-H2	43.106	86.8064	4032	-188	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-F1	43.1085	86.8065	3986	-349	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-C1	43.115	86.8102	3855	-1057	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-B2	43.1161	86.8128	3809	-1966	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-B1			3816	-1664	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-A1	43.1158	86.8143	3778	-2179	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-C3	43.1134	86.8126	3868	-979	BA
CN	URUMQI GLACIER NO. 1 E-BRANCH	1511	20180828	20190828	E-C2	43.1143	86.8113	3861	-1221	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-H2	43.1164	86.8031	4080	-416	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-E1	43.1193	86.8062	4000	-1044	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-E2	43.1179	86.8068	4009	-1114	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-E3	43.1169	86.8071	4017	-1045	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-F2	43.118	86.8048	4032	-821	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-G1	43.1187	86.8033	4057	-761	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-G2	43.1171	86.802	4021	-995	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-H1	43.1179	86.8006	4021	-593	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-F1	43.119	86.8045	4033	-840	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-H3	43.1165	86.8031	4076	266	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-D3	43.1179	86.8078	3987	-1324	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-G3	43.1169	86.8024	4049	-186	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-D1	43.1195	86.8073	3980	-1227	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-C2	43.1177	86.8035	4055	-1664	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-B2	43.1185	86.8102	3917	-1841	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-B1	43.1192	86.8102	3911	-1909	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-F3	43.1168	86.8054	4040	-432	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20170827	20180828	W-D2	43.1186	86.8076	3982	-1286	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-G3	43.1171	86.8039	4048	-7	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-D3	43.1185	86.8075	3966	-1188	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-E1	43.1199	86.8058	3982	-754	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-E2	43.1185	86.8064	3990	-946	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-E3	43.1174	86.8067	4001	-621	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-F1	43.1196	86.8041	4014	-725	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-F2	43.1186	86.8044	4012	-818	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-F3	43.1174	86.805	4026	-219	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-D2	43.1192	86.8073	3960	-1167	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-G2	43.1183	86.8032	4035	-885	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-H3	43.117	86.8027	4066	-65	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-H1			4074	-353	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-G1	43.1193	86.8029	4040	-523	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-C2	43.1188	86.809	3914	-1506	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-C1	43.1199	86.8085	3923	-1896	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-B2	43.1191	86.8099	3893	-1752	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-B1	43.1197	86.8098	3890	-1516	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-H2	43.1176	86.8018	4065	-322	BA
CN	URUMQI GLACIER NO. 1 W-BRANCH	1512	20180828	20190828	W-D1	43.12	86.807	3961	-1085	BA

CO - Colombia

CO	CONEJERAS	2721	20180131	20190212	7	4.814412	-75.371122	4713	-4455	BA
CO	CONEJERAS	2721	20180131	20190212	10	4.811065	-75.371805	4759	-3090	BA
CO	CONEJERAS	2721	20180131	20190212	11	4.812057	-75.370662	4738	-3335	BA
CO	CONEJERAS	2721	20180131	20190212	12A	4.813255	-75.370714	4733	-3840	BA
CO	CONEJERAS	2721	20180131	20190212	9	4.812865	-75.372452	4721	-3636	BA
CO	CONEJERAS	2721	20180131	20190212	8	4.813476	-75.37172	4716	-3699	BA
CO	CONEJERAS	2721	20180131	20190212	13	4.809553	-75.371774	4804	-1684	BA
CO	CONEJERAS	2721	20180131	20190212	14	4.807861	-75.371547	4877	-934	BA
CO	CONEJERAS	2721	20190212	20200128	8	4.813476	-75.37172	4710	-5454	BA
CO	CONEJERAS	2721	20190212	20200128	9A	4.812144	-75.371761	4734	-4752	BA
CO	CONEJERAS	2721	20190212	20200128	7	4.814412	-75.371122	4709	-6183	BA
CO	CONEJERAS	2721	20190212	20200128	10	4.811065	-75.371805	4754	-5139	BA
CO	CONEJERAS	2721	20190212	20200128	11	4.812057	-75.370662	4733	-4635	BA
CO	CONEJERAS	2721	20190212	20200128	12A	4.813255	-75.370714	4728	-4860	BA
CO	CONEJERAS	2721	20190212	20200128	13	4.809553	-75.371774	4801	-4115	BA
CO	CONEJERAS	2721	20190212	20200128	14	4.807861	-75.371547	4875	-2972	BA
CO	CONEJERAS	2721	20190212	20200128	9	4.812865	-75.372452	4716	-5022	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	2	6.494708	-72.317279	4885	391	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	9	6.495076	-72.309148	5110	1466	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	10	6.495219	-72.307412	5151	1487	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
CO	RITACUBA BLANCO	2763	20180214	20190223	1	6.494223	-72.317432	4872	426	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	4	6.495096	-72.315263	4956	-57	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	5	6.495214	-72.313473	5004	16	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	6	6.493924	-72.312914	5010	427	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	8	6.495198	-72.31135	5055	1084	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	3	6.493793	-72.315074	4947	-178	BA
CO	RITACUBA BLANCO	2763	20180214	20190223	7	6.494601	-72.311079	5060	664	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	8	6.49547	-72.31199	5047	1495	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	7	6.49452	-72.31195	5044	999	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	6	6.49437	72.31383	4989	477	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	5	6.49482	-72.3143	4981	-34	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	4	6.49489	-72.31603	4919	-1019	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	3	6.49411	-72.31577	4917	-171	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	10	6.49483	-72.30845	5135	1220	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	1	6.49438	-72.31776	4846	-1034	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	9	6.49474	-72.31013	5090	1154	BA
CO	RITACUBA BLANCO	2763	20190223	20191202	2	6.49411	-72.31719	4864	-999	BA
EC - Ecuador										
EC	ANTIZANA15ALPHA	1624	20171221	20190104	P1			5250	55	BA
EC	ANTIZANA15ALPHA	1624	20171221	20190104	P2			5350	148	BA
EC	ANTIZANA15ALPHA	1624	20171227	20181227	U5			5043	-1270	BA
EC	ANTIZANA15ALPHA	1624	20180104	20181227	V1			4885	-3640	BA
EC	ANTIZANA15ALPHA	1624	20180104	20181227	V4			4979	-2020	BA
EC	ANTIZANA15ALPHA	1624	20180104	20181227	V3			4931	-2750	BA
EC	ANTIZANA15ALPHA	1624	20180104	20181227	V2			4892	-3110	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	W3			4931	-5140	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	W2			4892	-5610	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	W1			4885	-6770	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	P2			5350	140	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	P1			5250	75	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	W5			4979	-4140	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	W6			5035	-5010	BA
EC	ANTIZANA15ALPHA	1624	20190104	20191227	W7			5043	-4250	BA
GL - Greenland										
GL	QASIGIANNGUIT	4566	20170911	20180503	8	64.16393	-51.35772	692	1115	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	2	64.15669	-51.35486	914	959	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	12	64.1623	-51.35862	714	1040	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	11	64.15975	-51.35744	767	1186	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	10	64.16136	-51.35493	738	1040	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	1	64.15763	-51.35488	890	998	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	4	64.1556	-51.35555	941	1422	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	6	64.15643	-51.359884	890	1154	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	3	64.1556	-51.35555	941	1422	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	7	64.16055	-51.36148	722	1034	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	5	64.157999	-51.352119	885	1011	BW
GL	QASIGIANNGUIT	4566	20170911	20180503	9	64.16106	-51.35814	729	1020	BW
GL	QASIGIANNGUIT	4566	20180503	20180920	6	64.15975	-51.35744	767	-1386	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	4	64.16106	-51.35814	729	-1767	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	8	64.157999	-51.352119	885	-1650	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	9	64.15763	-51.35488	890	-1457	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	7	64.1623	-51.35862	714	-1658	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	2	64.15643	-51.359884	890	-1506	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	10	64.15669	-51.35486	914	-1254	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	1	64.1556	-51.35555	941	-1440	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	5	64.16136	-51.35493	738	-1827	BS
GL	QASIGIANNGUIT	4566	20180503	20180920	3	64.16393	-51.35772	692	-1794	BS
GL	QASIGIANNGUIT	4566	20180920	20190514	4	64.16106	-51.35814	729	805	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	11	64.15669	-51.35486	914	1044	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	10	64.15763	-51.35488	890	986	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	1	64.1556	-51.35555	941	1003	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	2	64.15643	-51.359884	890	1065	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	3	64.16393	-51.35772	692	894	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	5	64.16136	-51.35493	738	1006	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	6	64.15975	-51.35744	767	1054	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	7	64.1623	-51.35862	714	1006	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	8	64.16055	-51.36148	722	783	BW
GL	QASIGIANNGUIT	4566	20180920	20190514	9	64.157999	-51.352119	885	970	BW
GL	QASIGIANNGUIT	4566	20190514	20190912	17	64.16055	-51.36148	722	-2466	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	12	64.1556	-51.35555	941	-2254	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	19	64.15763	-51.35488	890	-2000	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	18	64.157999	-51.352119	885	-1918	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	20	64.15669	-51.35486	914	-2790	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	16	64.1623	-51.35862	714	-3754	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	15	64.15975	-51.35744	767	-2798	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	13	64.16393	-51.35772	692	-2934	BS
GL	QASIGIANNGUIT	4566	20190514	20190912	14	64.16106	-51.35814	729	-3478	BS
IT - Italy										
IT	CARESER	635	20170914	20180915	10D	46.45	10.6888	3146	-1936	BA
IT	CARESER	635	20170914	20180915	9C	46.4486	10.6878	3130	-1675	BA
IT	CARESER	635	20170914	20180915	7B	46.4493	10.7233	3083	-1404	BA
IT	CARESER	635	20170914	20180915	7A	46.4487	10.7186	3039	-2283	BA
IT	CARESER	635	20170914	20180915	6L	46.4513	10.7214	3070	-1822	BA
IT	CARESER	635	20170914	20180915	6A	46.4539	10.7211	3077	-2014	BA
IT	CARESER	635	20170914	20180915	5L	46.4554	10.7154	3092	-2285	BA
IT	CARESER	635	20170914	20180915	3B	46.452	10.7169	3052	-2231	BA
IT	CARESER	635	20170914	20180915	2D	46.4507	10.71	2965	-3449	BA
IT	CARESER	635	20170914	20180521	5L	46.4554	10.7154	3092	797	BW
IT	CARESER	635	20170914	20180521	7B	46.4493	10.7233	3083	895	BW
IT	CARESER	635	20170914	20180521	10D	46.45	10.6888	3146	794	BW
IT	CARESER	635	20170914	20180521	13B	46.4533	10.6981	3060	703	BW
IT	CARESER	635	20170914	20180521	2D	46.4507	10.71	2965	646	BW
IT	CARESER	635	20170914	20180521	7A	46.4487	10.7186	3039	796	BW
IT	CARESER	635	20170914	20180521	3B	46.452	10.7169	3052	759	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
IT	CARESER	635	20170914	20180521	9C	46.4486	10.6878	3130	845	BW
IT	CARESER	635	20170914	20180521	6L	46.4513	10.7214	3070	942	BW
IT	CARESER	635	20170914	20180521	6A	46.4539	10.7211	3077	878	BW
IT	CARESER	635	20180521	20180915	7A	46.4487	10.7186	3039	-3079	BS
IT	CARESER	635	20180521	20180915	6L	46.4513	10.7214	3070	-2764	BS
IT	CARESER	635	20180521	20180915	6A	46.4539	10.7211	3077	-2891	BS
IT	CARESER	635	20180521	20180915	9C	46.4486	10.6878	3130	-2520	BS
IT	CARESER	635	20180521	20180915	3B	46.452	10.7169	3052	-2989	BS
IT	CARESER	635	20180521	20180915	2D	46.4507	10.71	2965	-4094	BS
IT	CARESER	635	20180521	20180915	10D	46.45	10.6888	3146	-2731	BS
IT	CARESER	635	20180521	20180915	7B	46.4493	10.7233	3083	-2299	BS
IT	CARESER	635	20180521	20180915	5L	46.4554	10.7154	3092	-3082	BS
IT	CARESER	635	20180915	20190921	F13	46.4467	10.7176	2999	-1683	BA
IT	CARESER	635	20180915	20190921	F8	46.4497	10.7191	3039	-1219	BA
IT	CARESER	635	20180915	20190921	F7	46.4487	10.7161	2991	-2538	BA
IT	CARESER	635	20180915	20190921	F6	46.4517	10.7176	3042	-1629	BA
IT	CARESER	635	20180915	20190921	F5	46.4527	10.7205	3061	-1538	BA
IT	CARESER	635	20180915	20190921	F4	46.4537	10.7235	3078	-1180	BA
IT	CARESER	635	20180915	20190921	F9	46.4507	10.722	3064	-1156	BA
IT	CARESER	635	20180915	20190921	F2	46.4538	10.7162	3062	-1980	BA
IT	CARESER	635	20180915	20190921	7B	46.4493	10.7233	3078	-826	BA
IT	CARESER	635	20180915	20190921	F12	46.4477	10.7205	3051	-1006	BA
IT	CARESER	635	20180915	20190921	F11	46.4487	10.7234	3084	-585	BA
IT	CARESER	635	20180915	20190921	F10	46.4517	10.7249	3087	-830	BA
IT	CARESER	635	20180915	20190921	5L	46.4554	10.7154	3081	-1953	BA
IT	CARESER	635	20180915	20190921	F3	46.4547	10.7191	3068	-1754	BA
IT	CARESER	635	20180915	20190921	6L	46.4513	10.7214	3061	-1335	BA
IT	CARESER	635	20180915	20190921	9C	46.4486	10.6878	3120	-1205	BA
IT	CARESER	635	20180915	20190921	3B	46.452	10.7169	3041	-1728	BA
IT	CARESER	635	20180915	20190921	2D	46.4507	10.71	2943	-2996	BA
IT	CARESER	635	20180915	20190921	7A	46.4487	10.7186	3029	-1570	BA
IT	CARESER	635	20180915	20190921	10D	46.45	10.6888	3132	-1718	BA
IT	CARESER	635	20180915	20190620	F8	46.4497	10.7191	3039	777	BW
IT	CARESER	635	20180915	20190620	7B	46.4493	10.7233	3078	1279	BW
IT	CARESER	635	20180915	20190620	F12	46.4477	10.7205	3051	1360	BW
IT	CARESER	635	20180915	20190620	F4	46.4537	10.7235	3078	741	BW
IT	CARESER	635	20190620	20190921	7B	46.4493	10.7233	3078	-2104	BS
IT	CARESER	635	20190620	20190921	F4	46.4537	10.7235	3078	-1921	BS
IT	CARESER	635	20190620	20190921	F12	46.4477	10.7205	3051	-2365	BS
IT	CARESER	635	20190620	20190921	F8	46.4497	10.7191	3039	-1996	BS
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P09	46.5731	11.1054	3030	-1596	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P06	46.5705	11.1103	2892	-2397	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P02	46.5649	11.1155	2710	-2688	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P03	46.5646	11.1137	2760	-2169	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P05	46.5659	11.1106	2850	-2802	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P01	46.5657	11.1208	2660	-3468	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P07	46.5723	11.1101	2987	-3024	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P08	46.5728	11.1057	3009	-2919	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P21	46.5705	11.0957	3357	-770	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P19	46.5622	11.11	2985	-1257	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P04	46.5655	11.1118	1812	-2253	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P10	46.574	11.1054	3045	-2346	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P24	46.5744	11.1031	3149	108	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P20	46.5713	11.0958	3403	-77	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P22	46.5726	11.1018	3158	-868	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P25	46.5737	11.1025	3131	-2415	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P18	46.5631	11.1059	2935	-1629	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P17	46.5641	11.1058	2877	-1836	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P16	46.5801	11.1115	3240	-1470	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P15	46.5752	11.1106	3174	114	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P14	46.5747	11.1114	3131	-1947	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P13	46.5613	11.113	2877	-1395	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P12	46.5624	11.1136	2826	-1860	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P11	46.5636	11.1142	2768	-2466	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20170927	20180928	P23	46.5714	11.1031	3122	-1603	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P15	46.964663	11.185241	3174	-735	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P16	46.967092	11.187667	3240	-49	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P17	46.944755	11.182998	2870	-963	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P18	46.942185	11.183235	2925	-1161	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P19	46.939717	11.183384	2981	-495	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P25	46.960323	11.174036	3109	-1971	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P24	46.962285	11.17543	3134	-1053	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P23	46.95406	11.175438	3112	-495	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P14	46.963084	11.187333	3130	-747	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P21	46.951601	11.16606	3354	-630	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P06	46.950917	11.184984	2865	-1431	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P22	46.957569	11.172124	3149	-420	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P13	46.936954	11.191839	2851	-225	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P12	46.940474	11.193638	2802	-675	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P11	46.943581	11.194961	2754	-1224	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P10	46.961116	11.182021	3038	-360	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P09	46.958287	11.182169	3007	-963	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P20	46.95364	11.166248	3403	-560	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P07	46.955432	11.183262	2967	-2583	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P05	46.949749	11.185343	2837	-1098	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P04	46.948622	11.188767	2795	-1386	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P03	46.946206	11.194174	2739	-1035	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P02	46.947156	11.199036	2690	-2565	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P01	46.94934	11.20249	2638	-2853	BA
IT	MALAVALLE (VEDR. DI) / UEBELTALF.	672	20180928	20190927	P08	46.957408	11.182974	2991	-1764	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P79	46.963	11.2247	2655	-2940	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P76	46.9654	11.2325	2792	-2130	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P80	46.9647	11.2248	2680	-2601	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P81	46.9667	11.2248	2714	-2400	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P84	46.964	11.2159	2863	-2088	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P85	46.9665	11.2295	2760	-2805	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P86	46.966	11.238	2816	-1950	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P50	46.966	11.2223	2756	-2910	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20170927	20180928	P49	46.9651	11.2176	2841	-1800	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P81	46.966651	11.224523	2714	-738	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P84	46.964588	11.216274	2863	-540	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P80	46.96448	11.22463	2686	-1647	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P79	46.962919	11.223935	2643	-1944	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P50	46.96617	11.220586	2763	-1143	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P49	46.964979	11.21796	2841	-225	BA
IT	PENDENTE (VEDR.) / HANGENDERF.	675	20180928	20190927	P85	46.965984	11.230569	2760	-1242	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44418	46.90334	12.10311	3045	-1170	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	43040	46.90643	12.10524	2935	-2763	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44420	46.90263	12.09945	3105	-891	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44421	46.90169	12.09118	3147	-639	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44422	46.90419	12.09323	3050	-945	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	16/13	46.90594	12.0916	2987	-1575	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	17/13	46.9074	12.09589	2971	-1179	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44426	46.90957	12.09677	2878	-2313	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44427	46.90779	12.09191	2931	-1737	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44466	46.90036	12.0991	3159	-837	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	42826	46.90743	12.10294	2888	-2106	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44413	46.90554	12.10275	2980	-1413	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	42186	46.90428	12.10081	3030	-1089	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	42217	46.90512	12.10523	2977	0	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44417	46.90408	12.09674	3067	-1287	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	44465	46.90914	12.09227	3113	-1899	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	22/17	46.91162	12.09587	2823	-2304	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	20/15	46.91304	12.09546	2812	-3105	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	24/13	46.90899	12.09224	2910	-2304	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20170922	20180927	23/17	46.91049	12.09372	2857	-2655	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	18/18	46.90957	12.09677	2878	-1692	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	24/18	46.90899	12.09224	2910	-1854	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	17/13	46.9074	12.09589	2878	-1195	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	44427	46.90779	12.09191	2812	-1350	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	20/15	46.91304	12.09546	2770	-2700	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	16/18	46.90594	12.0916	2975	-1662	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	23/17	46.91049	12.09372	2870	-2259	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	42826	46.90743	12.10294	2898	-1194	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	26/18	46.90914	12.09227	3113	-332	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	44466	46.90036	12.0991	3159	-766	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	44413	46.90554	12.10275	2980	-1237	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	42217	46.90512	12.10523	2977	-1136	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	43344	46.90408	12.09674	3067	-1467	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	22/17	46.91162	12.09587	2823	-1764	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	42186	46.90428	12.10081	3030	-566	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	44421	46.90169	12.09118	3147	-680	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	44420	46.90263	12.09945	3105	-842	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	43405	46.90643	12.10524	2935	-1627	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	43374	46.90334	12.10311	3045	-564	BA
IT	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	645	20180927	20190922	44422	46.90419	12.09323	3050	-1194	BA
KG - Kyrgyzstan										
KG	ABRAMOV	732	20180801	20190729	4right	39.62469	71.564657	3996	-1710	BA
KG	ABRAMOV	732	20180801	20190729	4middle	39.62242	71.559785	4000	-1760	BA
KG	ABRAMOV	732	20180801	20190729	3right	39.632289	71.562409	3914	-2620	BA
KG	ABRAMOV	732	20180801	20190729	23M1	39.640581	71.564685	3850	-3820	BA
KG	ABRAMOV	732	20180801	20190729	3middle	39.631235	71.565702	3928	-3290	BA
KG	ABRAMOV	732	20180801	20190729	5left	39.624145	71.547687	4037	-1560	BA
KG	ABRAMOV	732	20180801	20190729	34M1	39.627011	71.56035	3967	-2280	BA
KG	ABRAMOV	732	20180801	20190729	ac19c	39.603951	71.572043	4250	630	BA
KG	ABRAMOV	732	20180801	20190729	2right	39.643774	71.566527	3818	-3900	BA
KG	ABRAMOV	732	20180801	20190729	3left	39.632815	71.558188	3932	-2900	BA
KG	ABRAMOV	732	20180801	20190729	ac19	39.60961	71.530988	4217	750	BA
KG	ABRAMOV	732	20180801	20190729	ac19d	39.619067	71.523213	4287	690	BA
KG	ABRAMOV	732	20180801	20190729	ac-stat19	39.596348	71.556123	4398	1180	BA
KG	ABRAMOV	732	20180801	20190729	2left	39.644054	71.562028	3824	-3540	BA
KG	ABRAMOV	732	20180801	20190729	M10	39.650178	71.565774	3733	-4280	BA
KG	ABRAMOV	732	20180801	20190729	M11	39.648662	71.565065	3758	-4320	BA
KG	ABRAMOV	732	20180801	20190729	23M2	39.634725	71.563466	3896	-2790	BA
KG	ABRAMOV	732	20180801	20190729	2middle	39.643989	71.564962	3818	-3840	BA
KG	ABRAMOV	732	20180801	20190729	5right	39.621051	71.548715	4049	-1400	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ02	41.794045	77.748997	4027	-1719	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ08	41.786671	77.751209	4184	-990	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	213	41.780075	77.750217	4355	179	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	Bsak_1	41.780214	77.751197	4338	350	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	Bsak_3_18	41.780258	77.749334	4340	210	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ01	41.795681	77.7495	3985	-2070	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ12	41.790685	77.747927	4106	-1629	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ05	41.791669	77.747813	4087	-1287	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ04	41.790713	77.749769	4098	-1323	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ13	41.784034	77.752263	4236	-738	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ11	41.788178	77.749553	4145	-945	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ10	41.785675	77.751419	4202	-702	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ09	41.788415	77.750971	4148	-1215	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ07	41.793226	77.750142	4037	-1881	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20170915	20180901	SZ14	41.784625	77.750508	4225	-819	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ01	41.795681	77.7495	3985	-3231	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ13	41.784034	77.752263	4236	-828	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ08	41.786671	77.751209	4184	-1323	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ12	41.790685	77.747927	4106	-450	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ11	41.788178	77.749553	4145	-1233	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ10	41.785675	77.751419	4202	-873	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ09	41.788415	77.750971	4148	-1764	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ14	41.784625	77.750508	4225	-756	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ07	41.793226	77.750142	4037	-3078	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ05	41.791669	77.747813	4087	-603	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ02	41.794045	77.748997	4027	-2511	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	C3-ac19a	41.780204	77.751221	4351	364	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	BC-ac19c	41.780066	77.750204	4360	544	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	BC-ac19b	41.780285	77.749348	4347	699	BA
KG	BATYSH SOOK/SYEK ZAPADNIY	781	20180901	20190801	SZ04	41.790713	77.749769	4098	-576	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	201	41.784582	78.152812	4259	0	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK017	41.797631	78.164426	4144	-120	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	202	41.785606	78.152695	4238	600	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	203	41.785945	78.152571	4223	800	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK004	41.802216	78.147373	3955	-180	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK020	41.79898	78.172394	4232	-80	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK019	41.790533	78.164727	4164	-80	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK018	41.790001	78.154522	4149	-110	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	205	41.78674	78.152296	4208	800	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK016	41.794481	78.157597	4078	-120	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK009	41.805489	78.141017	3868	-240	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK008	41.806197	78.146318	3777	-300	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK007	41.80349	78.149002	3865	-220	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK015	41.79777	78.153287	4037	-150	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK005	41.799402	78.150495	3999	-150	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	204	41.786419	78.152418	4214	900	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK003	41.80494	78.144664	3908	-200	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK002	41.807128	78.142112	3827	-230	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	212	41.791284	78.152479	4144	500	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	211	41.79041	78.152109	4159	400	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	210	41.789433	78.151948	4177	400	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	209	41.788714	78.152004	4183	500	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	208	41.788084	78.152007	4189	700	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	206	41.786981	78.152213	4204	1200	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	AK006	41.802958	78.14462	3924	-210	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20170909	20180901	207	41.787527	78.152068	4195	1100	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK0519	41.799402	78.150495	4003	-124	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	Ak 0819	2.40017	76.514677	4339	4	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	Ak 08119	2.40034	76.580138	4359	34	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK0019	41.808139	78.141104	3807	-288	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK0029	41.80696	78.142228	3861	-198	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK0039	41.804906	78.144726	3906	-180	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK004	41.802216	78.147373	3951	-152	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK006	41.802958	78.14462	3925	-176	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK007	41.80349	78.149002	3944	-177	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK0089	41.806181	78.146379	3886	-241	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK009	41.805487	78.140957	3873	-201	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK017	41.797631	78.164426	4149	-93	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK018	41.790001	78.154522	4158	-80	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	Ak_ac196	41.782058	78.153056	4238	0	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK020	41.79898	78.172394	4232	-30	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK1519	41.797822	78.153237	4035	-123	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK1619	41.794506	78.157511	4085	-104	BA
KG	GLACIER NO. 354 (AKSHIYRAK)	3889	20180901	20190805	AK019	41.790533	78.164727	4173	-90	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0218	42.791836	76.850788	3787	-1620	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0318	42.792683	76.851816	3807	-1323	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0518	42.7938	76.853512	3852	-1179	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0618	42.794703	76.853869	3866	-1161	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0718	42.795917	76.853967	3855	-990	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0818	42.796248	76.854698	3897	-738	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0918	42.796017	76.856158	3906	-441	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK1018	42.688046	69.69182	3919	-495	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK1118	42.798009	76.855496	3906	-1260	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	SNOWPIT02	42.792415	76.866688	4036	584	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	SNOWPIT03	42.790454	76.867681	4112	920	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20170818	20180815	OK0418	42.792958	76.852668	3820	-1431	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0518	42.793827	76.853464	3852	-1251	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	SNOWPIT02	42.792316	76.866697	4033	692	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK1118	42.797982	76.855459	3907	-315	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK1018	42.796177	76.85741	3919	-477	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0918	42.795982	76.856121	3909	-441	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0818	42.796195	76.854623	3898	-405	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0618	42.794712	76.853906	3870	-1107	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0418	42.793013	76.85262	3817	-1962	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0318	42.792702	76.851804	3793	-1638	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0218	42.791917	76.850778	3783	-1791	BA
KG	GLACIER NO. 599 (KJUNGEI ALA-TOO)	10402	20180815	20190807	OK0718	42.795909	76.853954	3891	-1125	BA
KG	GOLUBIN	753	20170831	20180824	GOL1018	42.465513	74.491421	3591	-1908	BA
KG	GOLUBIN	753	20170831	20180824	ak2	42.447952	74.505973	3957	738	BA
KG	GOLUBIN	753	20170831	20180824	ak3	42.443963	74.506028	4047	1305	BA
KG	GOLUBIN	753	20170831	20180824	GOL0318	42.467024	74.488988	3547	-2088	BA
KG	GOLUBIN	753	20170831	20180824	GOL0518	42.470086	74.488914	3505	-2556	BA
KG	GOLUBIN	753	20170831	20180824	GOL0918	42.47393	74.484637	3426	-3213	BA
KG	GOLUBIN	753	20170831	20180824	GOL1218	42.463887	74.490339	3591	-1998	BA
KG	GOLUBIN	753	20170831	20180824	GOL1318	42.463054	74.491416	3614	-1314	BA
KG	GOLUBIN	753	20170831	20180824	GOL1418	42.464172	74.493572	3619	-1899	BA
KG	GOLUBIN	753	20170831	20180824	GOL1518	42.459463	74.495982	3667	-1863	BA
KG	GOLUBIN	753	20170831	20180824	ak1	42.452176	74.503787	3930	351	BA
KG	GOLUBIN	753	20170831	20180824	GOL0718	42.471283	74.488819	3490	-3204	BA
KG	GOLUBIN	753	20182408	20192408	Golacc19a	42.452176	74.503787	3925	1200	BA
KG	GOLUBIN	753	20182408	20192408	GOL1219	42.463887	74.490339	3599	-2050	BA
KG	GOLUBIN	753	20182408	20192408	GOL0519	42.470086	74.488914	3510	-3250	BA
KG	GOLUBIN	753	20182408	20192408	Golacc19b	42.447952	74.505973	3956	480	BA
KG	GOLUBIN	753	20182408	20192408	GOL1519	42.459463	74.495982	3668	-1700	BA
KG	GOLUBIN	753	20182408	20192408	GOL1419	42.464172	74.493572	3620	-2500	BA
KG	GOLUBIN	753	20182408	20192408	GOL1319	42.463054	74.491416	3614	-2080	BA
KG	GOLUBIN	753	20182408	20192408	GOL1019	42.465513	74.491421	3598	-2620	BA
KG	GOLUBIN	753	20182408	20192408	GOL0919	42.47393	74.484637	3423	-4220	BA
KG	GOLUBIN	753	20182408	20192408	GOL0719	42.471283	74.488819	3493	-4130	BA
KG	GOLUBIN	753	20182408	20192408	GOL0119	42.474797	74.485092	3409	-4780	BA
KG	GOLUBIN	753	20182408	20192408	GOL0219	42.470851	74.486706	3491	-3640	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
KG	GOLUBIN	753	20182408	20192408	GOL0319	42.467024	74.488988	3547	-2900	BA
KG	GOLUBIN	753	20182408	20192408	Golacc19c	42.443963	74.506028	4047	1500	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	ACC-2	42.300303	78.852304	4138	430	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-3	42.318067	78.871106	3769	-2320	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-4	42.31948	78.867352	3798	-2010	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-5	42.317856	78.867215	3801	-2210	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-6	42.315632	78.86679	3807	-2270	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-7	42.315259	78.863429	3838	-2120	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-8	42.317019	78.862373	3838	-1750	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-20	42.307366	78.850623	4019	-420	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	ACC-1	42.303251	78.84899	4061	460	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-16	42.310758	78.847548	3989	-360	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	ACC-3	42.299223	78.855361	4174	350	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-9	42.319241	78.860596	3850	-1370	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-2	42.316225	78.872122	3755	-2570	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-19	42.307792	78.847598	4022	-540	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-17	42.309498	78.852236	3988	-490	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-15	42.315881	78.850587	3938	-410	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-14	42.31424	78.853321	3940	-1330	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-13	42.311636	78.856958	3947	-810	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-12	42.313806	78.858947	3883	-1410	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-11	42.316084	78.857914	3885	-1610	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-10	42.31856	78.856382	3883	-1010	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-1	42.318352	78.874962	3704	-3230	BA
KG	TURGEN-AKSUU	13057	20180814	20190803	Ab-18	42.309058	78.855141	3990	-810	BA
KZ - Kazakhstan										
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	147	77.084375	43.052187	3545	-1314	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	45	77.081854	43.042678	3715	-819	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	68	77.083517	43.045483	3683	-828	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	65	77.08208	43.045743	3680	-1071	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	63	77.079186	43.045717	3687	-882	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	62	77.078303	43.04573	3690	-702	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	61	77.077398	43.045654	3693	-810	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	58	77.0843	43.044212	3704	-792	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	56	77.082068	43.043904	3702	-909	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	55	77.080587	43.044027	3698	-477	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	54	77.07952	43.044084	3705	-594	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	53	77.078669	43.044003	3711	-603	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	3	77.077605	43.040127	3758	-216	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	5	77.07898	43.040461	3748	-351	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	710	77.084376	43.045997	3683	-1053	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	44	77.08067	43.042949	3716	-486	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	43	77.079026	43.042757	3728	-576	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	42	77.078444	43.042758	3728	-405	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	41	77.077253	43.042741	3728	-558	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	4	77.078279	43.040271	3753	-198	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	36	77.081911	43.041975	3724	-1017	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	35	77.080909	43.042137	3726	-720	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	34	77.079503	43.042182	3734	-648	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	33	77.078517	43.042129	3736	-423	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	32	77.077402	43.042158	3735	-405	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	31	77.075771	43.042724	3731	-369	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	52	77.076999	43.043944	3714	-261	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	83	77.080099	43.047918	3655	-765	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	1	77.074939	43.04039	3772	-414	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	145	77.08304	43.052525	3554	-1575	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	96	77.083176	43.048143	3643	-1404	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	95	77.082558	43.048542	3640	-1017	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	94	77.081368	43.048689	3641	-675	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	93	77.080807	43.048725	3640	-1017	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	92	77.080069	43.048765	3641	-810	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	91	77.079326	43.048814	3644	-927	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	88	77.083469	43.047119	3659	-1161	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	87	77.082414	43.047512	3662	-1431	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	86	77.081784	43.047669	3661	-945	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	69	77.084233	43.045294	3690	-495	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	84	77.08067	43.047851	3654	-684	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	71	77.078458	43.046898	3676	-603	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	82	77.079394	43.048056	3657	-612	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	81	77.078747	43.048135	3660	-1188	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	79	77.083881	43.046252	3675	-882	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	78	77.08318	43.046241	3672	-936	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	77	77.082605	43.046652	3668	-936	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	76	77.082029	43.046743	3669	-1062	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	75	77.08148	43.046818	3670	-918	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	74	77.080726	43.046905	3666	-747	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	73	77.079902	43.046915	3670	-918	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	72	77.079212	43.046904	3674	-855	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	64	77.080652	43.045664	3680	-720	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	85	77.081138	43.047713	3659	-954	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	117	77.083608	43.049993	3610	-1350	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	137	77.084072	43.051801	3556	-1494	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	136	77.083404	43.051927	3562	-1845	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	135	77.082812	43.051994	3569	-1755	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	134	77.082079	43.052007	3573	-1386	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	132	77.080473	43.051791	3574	-1098	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	131	77.079503	43.051817	3577	-756	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	13	77.077318	43.041249	3745	-351	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	125	77.083385	43.051118	3583	-1422	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	124	77.082518	43.051261	3587	-1341	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	123	77.081683	43.051332	3586	-1404	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	122	77.08073	43.051381	3582	-1044	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	14	77.078299	43.041177	3743	-495	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	12	77.075912	43.041368	3751	-468	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	106	77.08271	43.04905	3626	-1116	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	116	77.083091	43.050108	3605	-1881	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	115	77.082627	43.049952	3609	-1449	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	114	77.082181	43.050254	3607	-1143	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	113	77.081249	43.050306	3606	-891	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	112	77.080436	43.050346	3608	-675	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	111	77.079493	43.050309	3612	-621	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	11	77.074969	43.041237	3762	-297	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	26	77.080929	43.041664	3732	-936	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	105	77.081972	43.049075	3632	-927	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	67	77.082984	43.045593	3679	-783	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	103	77.080496	43.049179	3633	-1332	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	102	77.079753	43.049309	3633	-999	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	121	77.07948	43.051328	3588	-648	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	22	77.076756	43.042277	3734	-477	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	104	77.08125	43.049099	3633	-918	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	141	77.07944	43.052387	3567	-1053	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	24	77.079033	43.041706	3739	-621	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	25	77.080294	43.041692	3735	-630	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	23	77.077729	43.041662	3740	-450	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	21	77.075021	43.042295	3744	-243	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	2	77.076651	43.040023	3761	-171	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	165	77.084204	43.054308	3504	-1989	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	164	77.083348	43.054536	3506	-2097	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	162	77.082044	43.054554	3508	-1773	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	161	77.080902	43.054552	3516	-1836	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	16	77.080631	43.04104	3738	-729	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	157	77.084011	43.052992	3532	-2007	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	144	77.08228	43.05255	3560	-1602	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	155	77.08294	43.053216	3538	-1827	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	154	77.082256	43.053296	3541	-1512	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	153	77.081302	43.053379	3543	-1053	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	152	77.080677	43.053244	3551	-1431	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	151	77.079788	43.053206	3551	-1242	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	15	77.079898	43.041115	3739	-657	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	146	77.083702	43.052403	3547	-2061	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	143	77.081105	43.052489	3565	-1620	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	142	77.080707	43.052482	3565	-1422	BA
KZ	TS.TUYUKSUYSKIY	817	20170825	20180831	156	77.083521	43.053098	3535	-2097	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	54	77.07955	43.04414	3703	-594	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	32	77.07742	43.04221	3733	-405	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	55	77.08062	43.04408	3696	-477	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	56	77.08209	43.04396	3700	-909	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	58	77.08426	43.04423	3702	-792	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	61	77.07741	43.04567	3690	-810	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	62	77.07833	43.04575	3687	-702	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	64	77.08067	43.0457	3678	-720	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	65	77.08208	43.04578	3678	-1071	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	67	77.08297	43.04562	3677	-783	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	63	77.0792	43.04575	3685	-882	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	53	77.07869	43.04405	3708	-603	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	33	77.07855	43.0422	3734	-423	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	5	77.07901	43.04054	3745	-351	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	35	77.08095	43.04221	3724	-720	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	43	77.07907	43.04282	3726	-576	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	42	77.07847	43.04282	3726	-405	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	41	77.07728	43.04279	3727	-558	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	4	77.07831	43.04035	3750	-198	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	36	77.08194	43.04204	3721	-1017	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	68	77.08352	43.04551	3682	-828	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	82	77.07939	43.04808	3655	-612	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	34	77.07953	43.04225	3732	-648	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	44	77.08071	43.04301	3713	-486	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	84	77.08067	43.04788	3652	-684	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	31	77.0758	43.04276	3730	-369	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	45	77.08189	43.04272	3713	-819	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	96	77.08318	43.04817	3641	-1404	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	95	77.08256	43.04857	3637	-1017	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	94	77.08137	43.04872	3639	-675	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	93	77.08081	43.04875	3638	-1017	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	92	77.08007	43.04879	3639	-810	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	91	77.07933	43.04884	3642	-927	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	88	77.08346	43.04714	3657	-1161	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	87	77.08242	43.04754	3660	-1431	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	79	77.08387	43.04628	3673	-882	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	85	77.08115	43.04774	3657	-954	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	69	77.08421	43.04532	3689	-495	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	83	77.0801	43.04795	3653	-765	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	81	77.07875	43.04815	3658	-1188	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	78	77.08318	43.04626	3671	-936	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	77	77.08261	43.04668	3666	-936	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	76	77.08205	43.04678	3667	-1062	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	75	77.08148	43.04686	3668	-918	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	74	77.08073	43.04694	3664	-747	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	73	77.07991	43.04694	3668	-918	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	72	77.07923	43.04693	3672	-855	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	710	77.08436	43.04602	3682	-1053	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	71	77.07849	43.0469	3674	-603	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	86	77.08179	43.0477	3660	-945	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	113	77.08125	43.05034	3604	-891	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	134	77.08207	43.05202	3570	-1386	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	132	77.08046	43.0518	3572	-1098	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	131	77.07949	43.05181	3575	-756	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	13	77.07735	43.04131	3743	-351	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	125	77.08338	43.05114	3580	-1422	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	123	77.08168	43.05135	3584	-1404	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	121	77.07947	43.05133	3586	-648	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	12	77.07593	43.04142	3749	-468	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	117	77.08359	43.05	3608	-1350	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	116	77.08309	43.05012	3603	-1881	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	135	77.08281	43.052	3567	-1755	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	114	77.08219	43.05028	3604	-1143	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	124	77.0825	43.05127	3585	-1341	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	112	77.08042	43.05037	3606	-675	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	111	77.07949	43.05032	3610	-621	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	11	77.075	43.04128	3760	-297	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	106	77.08271	43.04908	3623	-1116	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	105	77.08197	43.0491	3630	-927	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	104	77.08125	43.04913	3631	-918	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	103	77.08049	43.04921	3631	-1332	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	102	77.07977	43.04933	3631	-999	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	1	77.07498	43.04044	3770	-414	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	52	77.07703	43.04398	3713	-261	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	3	77.07764	43.04021	3755	-216	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	115	77.08262	43.04998	3607	-1449	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	164	77.08334	43.05453	3503	-2097	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	26	77.08096	43.04173	3730	-936	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	25	77.08033	43.04177	3734	-630	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	24	77.07907	43.04178	3738	-621	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	23	77.07776	43.04173	3739	-450	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	22	77.07677	43.04232	3732	-477	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	122	77.08073	43.05139	3581	-1044	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	2	77.07669	43.04009	3759	-171	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	136	77.08341	43.05193	3560	-1845	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	162	77.08205	43.05455	3505	-1773	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	16	77.08067	43.0411	3736	-729	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	156	77.0835	43.0531	3532	-2097	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	155	77.08293	43.05322	3536	-1827	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	154	77.08226	43.0533	3538	-1512	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	142	77.0807	43.05248	3563	-1422	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	137	77.08408	43.05181	3553	-1494	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	21	77.07504	43.04232	3742	-243	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	153	77.08129	43.05338	3540	-1053	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	14	77.07834	43.04124	3742	-495	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	143	77.08111	43.0525	3563	-1620	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	144	77.08227	43.05255	3557	-1602	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	151	77.07977	43.0532	3549	-1242	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	152	77.08067	43.05324	3549	-1431	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	15	77.07993	43.04118	3738	-657	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	147	77.08439	43.0522	3542	-1314	BA
KZ	TS.TUYUKSUYSKIY	817	20180831	20190905	145	77.08302	43.05253	3551	-1575	BA
NP - Nepal										
NP	RIKHA SAMBA	1516	20171009	20181001	S1_2017	28.798407	83.49911	5437	-3727	BA
NP	RIKHA SAMBA	1516	20171009	20181001	S2_2017	28.800456	83.49621	5506	-2834	BA
NP	RIKHA SAMBA	1516	20171009	20181001	S2_2016	28.800456	83.49621	5506	-2741	BA
NP	RIKHA SAMBA	1516	20171010	20181003	S6_2017	28.825657	83.49174	5749	-77	BA
NP	RIKHA SAMBA	1516	20171010	20181002	S5_2017	28.811438	83.49201	5691	-604	BA
NP	RIKHA SAMBA	1516	20171010	20181002	S4_2017	28.813145	83.4945	5622	-721	BA
NP	RIKHA SAMBA	1516	20171010	20181002	S3_2017	28.803975	83.49506	5584	-1510	BA
NP	RIKHA SAMBA	1516	20171010	20181001	S3_2016	28.803808	83.49524	5582	-1923	BA
NP	RIKHA SAMBA	1516	20171011	20181003	S8_2017	28.836668	83.49	5900	171	BA
NP	RIKHA SAMBA	1516	20171011	20181003	S7_2015	28.828336	83.48932	5848	120	BA
NP	RIKHA SAMBA	1516	20171011	20181003	S7_2017	28.828336	83.48932	5848	108	BA
NP	RIKHA SAMBA	1516	20181001	20190926	S2_2018	28.800456	83.49621	5506	-2189	BA
NP	RIKHA SAMBA	1516	20181001	20190926	S3_2016	28.803808	83.49524	5582	-1211	BA
NP	RIKHA SAMBA	1516	20181001	20190926	S1_2018	28.798407	83.49911	5437	-3292	BA
NP	RIKHA SAMBA	1516	20181001	20190926	S2_2017	28.800456	83.49621	5506	-2182	BA
NP	RIKHA SAMBA	1516	20181002	20190927	S4_2015	28.813145	83.4945	5622	-711	BA
NP	RIKHA SAMBA	1516	20181002	20190927	S5_2015	28.811438	83.49201	5691	-554	BA
NP	RIKHA SAMBA	1516	20181002	20190927	S5_2017	28.811438	83.49201	5691	-548	BA
NP	RIKHA SAMBA	1516	20181002	20190926	S3_2018	28.803975	83.49506	5584	-1977	BA
NP	RIKHA SAMBA	1516	20181002	20190926	S3_2017	28.803975	83.49506	5584	-1394	BA
NP	RIKHA SAMBA	1516	20181003	20190927	S6_2017	28.825657	83.49174	5749	34	BA
NP	RIKHA SAMBA	1516	20181003	20190927	S7_2017	28.828336	83.48932	5848	14	BA
NP	RIKHA SAMBA	1516	20181003	20190927	S8_2017	28.836668	83.49	5900	128	BA
NP	RIKHA SAMBA	1516	20181003	20190927	St_nAWS_18	28.8282	83.48858	5792	79	BA
NP	YALA	912	20171121	20181128	S7_1117	28.234768	85.623276	5460	-637	BA
NP	YALA	912	20171121	20181128	S6_1117	28.234601	85.621643	5400	-1435	BA
NP	YALA	912	20171121	20181128	S5A_1117	28.236465	85.619167	5371	-1728	BA
NP	YALA	912	20171121	20181128	S5_1117	28.234334	85.620165	5354	-1693	BA
NP	YALA	912	20171122	20181128	S4A_1117	28.235786	85.617084	5314	-3114	BA
NP	YALA	912	20171122	20181128	S3_1116	28.234499	85.616739	5288	-1897	BA
NP	YALA	912	20171122	20181128	S3_1117	28.234499	85.616739	5288	-2489	BA
NP	YALA	912	20171122	20181128	S3A_1117	28.235926	85.615648	5266	-2518	BA
NP	YALA	912	20171122	20181128	S4_1117	28.234633	85.618022	5322	-2323	BA
NP	YALA	912	20171122	20181127	S2_1117	28.234871	85.615173	5227	-2830	BA
NP	YALA	912	20171122	20181127	S1A_1117	28.236828	85.612657	5218	-3479	BA
NP	YALA	912	20171122	20181127	S1_1117	28.235288	85.61269	5168	-4226	BA
NP	YALA	912	20171123	20181129	S8_1117	28.23435	85.624882	5482	-308	BA
NP	YALA	912	20171123	20181129	S8A_1117	28.235105	85.624862	5502	-191	BA
NP	YALA	912	20171123	20181129	S8_1115	28.23435	85.624882	5482	-259	BA
NP	YALA	912	20181127	20191119	S1B_1118	28.236828	85.612657	5218	-3136	BA
NP	YALA	912	20181127	20191119	S1_1117	28.235288	85.61269	5168	-2955	BA
NP	YALA	912	20181127	20191119	S1_1118	28.235288	85.61269	5168	-3711	BA
NP	YALA	912	20181128	20191120	S7_1117	28.234768	85.623276	5460	-604	BA
NP	YALA	912	20181128	20191120	S6_1117	28.234601	85.621643	5400	-1025	BA
NP	YALA	912	20181128	20191120	S5A_1117	28.236465	85.619167	5370	-1037	BA
NP	YALA	912	20181128	20191120	S5_1117	28.234334	85.620165	5354	-932	BA
NP	YALA	912	20181128	20191120	S4_1117	28.234633	85.618022	5321	-1812	BA
NP	YALA	912	20181128	20191120	S8_1115	28.23435	85.624882	5482	-602	BA
NP	YALA	912	20181128	20191119	S2_1117	28.234871	85.615173	5227	-2555	BA
NP	YALA	912	20181128	20191119	S3_1117	28.234499	85.616739	5288	-2512	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
NP	YALA	912	20181128	20191119	S3A_1117	28.235926	85.615648	5266	-2599	BA
NP	YALA	912	20181129	20191120	S8_1117	28.23435	85.624882	5482	-238	BA
NZ - New Zealand										
NZ	ROLLESTON	1538	20170319	20171203	7	-42.888784	171.526704		2543	BW
NZ	ROLLESTON	1538	20170319	20171203	3	-42.889345	171.52696		2094	BW
NZ	ROLLESTON	1538	20170319	20171203	25	-42.889962	171.527325		1407	BW
NZ	ROLLESTON	1538	20170319	20171203	26	-42.889917	171.527327		1467	BW
NZ	ROLLESTON	1538	20170319	20171203	28	-42.888666	171.526622		2842	BW
NZ	ROLLESTON	1538	20170319	20171203	24	-42.88999	171.527349		1135	BW
NZ	ROLLESTON	1538	20170319	20171203	30	-42.888636	171.526451		2812	BW
NZ	ROLLESTON	1538	20170319	20171203	31	-42.888439	171.526529		2932	BW
NZ	ROLLESTON	1538	20170319	20171203	4	-42.889282	171.526925		2214	BW
NZ	ROLLESTON	1538	20170319	20171203	8	-42.888885	171.526849		2483	BW
NZ	ROLLESTON	1538	20170319	20171203	6	-42.88892	171.526775		2483	BW
NZ	ROLLESTON	1538	20170319	20171203	9	-42.888794	171.526814		2483	BW
NZ	ROLLESTON	1538	20170319	20171203	27	-42.888745	171.526485		2723	BW
NZ	ROLLESTON	1538	20170319	20171203	23	-42.890062	171.527409		1105	BW
NZ	ROLLESTON	1538	20170319	20171203	5	-42.889136	171.526806		2393	BW
NZ	ROLLESTON	1538	20170319	20171203	15	-42.889663	171.527161		1974	BW
NZ	ROLLESTON	1538	20170319	20171203	22	-42.890153	171.527468		1105	BW
NZ	ROLLESTON	1538	20170319	20171203	29	-42.888285	171.526447		2902	BW
NZ	ROLLESTON	1538	20170319	20171203	1	-42.888666	171.526695		2513	BW
NZ	ROLLESTON	1538	20170319	20171203	10	-42.888586	171.526758		2423	BW
NZ	ROLLESTON	1538	20170319	20171203	11	-42.889944	171.527301		1437	BW
NZ	ROLLESTON	1538	20170319	20171203	12	-42.88989	171.527266		1584	BW
NZ	ROLLESTON	1538	20170319	20171203	14	-42.889744	171.527171		1645	BW
NZ	ROLLESTON	1538	20170319	20171203	16	-42.890153	171.527443		1045	BW
NZ	ROLLESTON	1538	20170319	20171203	17	-42.890226	171.527503		1287	BW
NZ	ROLLESTON	1538	20170319	20171203	18	-42.890298	171.527526		1554	BW
NZ	ROLLESTON	1538	20170319	20171203	19	-42.890407	171.52756		1885	BW
NZ	ROLLESTON	1538	20170319	20171203	2	-42.889526	171.526993		2034	BW
NZ	ROLLESTON	1538	20170319	20171203	20	-42.890325	171.527549		1735	BW
NZ	ROLLESTON	1538	20170319	20171203	21	-42.890261	171.527465		1377	BW
NZ	ROLLESTON	1538	20170319	20171203	13	-42.889845	171.527291		1554	BW
NZ	ROLLESTON	1538	20171203	20180314	S3	-42.889944	171.527301	1758	-5099	BS
NZ	ROLLESTON	1538	20171203	20180314	S4	-42.890153	171.527443	1746	-5833	BS
NZ	ROLLESTON	1538	20171203	20180314	S2	-42.889526	171.526993	1778	-4588	BS
NZ	ROLLESTON	1538	20171203	20180314	S1	-42.888666	171.526695	1812	-4105	BS
NZ	ROLLESTON	1538	20180314	20181207	36	-42.88842	171.5271		2458	BW
NZ	ROLLESTON	1538	20180314	20181207	29	-42.88901	171.5279		1878	BW
NZ	ROLLESTON	1538	20180314	20181207	3	-42.8887	171.5263		2529	BW
NZ	ROLLESTON	1538	20180314	20181207	30	-42.88894	171.5278		1802	BW
NZ	ROLLESTON	1538	20180314	20181207	31	-42.88878	171.5277		2089	BW
NZ	ROLLESTON	1538	20180314	20181207	32	-42.88865	171.5276		2089	BW
NZ	ROLLESTON	1538	20180314	20181207	9	-42.88892	171.5266		2517	BW
NZ	ROLLESTON	1538	20180314	20181207	33	-42.88849	171.5275		2218	BW
NZ	ROLLESTON	1538	20180314	20181207	8	-42.88829	171.526		3662	BW
NZ	ROLLESTON	1538	20180314	20181207	35	-42.88829	171.5273		2957	BW
NZ	ROLLESTON	1538	20180314	20181207	19	-42.88971	171.5277		1508	BW
NZ	ROLLESTON	1538	20180314	20181207	37	-42.88849	171.5269		2635	BW
NZ	ROLLESTON	1538	20180314	20181207	38	-42.8886	171.5266		2822	BW
NZ	ROLLESTON	1538	20180314	20181207	4	-42.88862	171.5262		2899	BW
NZ	ROLLESTON	1538	20180314	20181207	5	-42.88849	171.5261		2957	BW
NZ	ROLLESTON	1538	20180314	20181207	6	-42.88839	171.5261		3544	BW
NZ	ROLLESTON	1538	20180314	20181207	7	-42.88833	171.526		3309	BW
NZ	ROLLESTON	1538	20180314	20181207	28	-42.88909	171.528		1596	BW
NZ	ROLLESTON	1538	20180314	20181207	34	-42.8884	171.5274		2910	BW
NZ	ROLLESTON	1538	20180314	20181207	15	-42.88961	171.5271		1948	BW
NZ	ROLLESTON	1538	20180314	20181207	1	-42.88894	171.5266		2124	BW
NZ	ROLLESTON	1538	20180314	20181207	10	-42.88906	171.5267		2488	BW
NZ	ROLLESTON	1538	20180314	20181207	11	-42.88861	171.5268		3233	BW
NZ	ROLLESTON	1538	20180314	20181207	12	-42.88921	171.5268		2282	BW
NZ	ROLLESTON	1538	20180314	20181207	20	-42.88983	171.5278		1508	BW
NZ	ROLLESTON	1538	20180314	20181207	14	-42.88949	171.527		1960	BW
NZ	ROLLESTON	1538	20180314	20181207	27	-42.88921	171.5281		1843	BW
NZ	ROLLESTON	1538	20180314	20181207	16	-42.88941	171.5274		1925	BW
NZ	ROLLESTON	1538	20180314	20181207	17	-42.88951	171.5275		1637	BW
NZ	ROLLESTON	1538	20180314	20181207	18	-42.88964	171.5276		1508	BW
NZ	ROLLESTON	1538	20180314	20181207	2	-42.88884	171.5264		2635	BW
NZ	ROLLESTON	1538	20180314	20181207	21	-42.88995	171.528		1286	BW
NZ	ROLLESTON	1538	20180314	20181207	22	-42.89002	171.528		1579	BW
NZ	ROLLESTON	1538	20180314	20181207	23	-42.8896	171.5285		2435	BW
NZ	ROLLESTON	1538	20180314	20181207	24	-42.88949	171.5284		1837	BW
NZ	ROLLESTON	1538	20180314	20181207	25	-42.8894	171.5283		1755	BW
NZ	ROLLESTON	1538	20180314	20181207	26	-42.88931	171.5282		1889	BW
NZ	ROLLESTON	1538	20180314	20181207	13	-42.88939	171.5269		2048	BW
NZ	ROLLESTON	1538	20181207	20190323	S1	-42.88861	171.5268	1812	3903	BS
NZ	ROLLESTON	1538	20181207	20190323	S2	-42.88949	171.527	1784	4527	BS
NZ	ROLLESTON	1538	20181207	20190323	S3	-42.88941	171.5274	1778	5400	BS
NZ	ROLLESTON	1538	20181207	20190323	S4	-42.88983	171.5278	1749	5268	BS
RU - Russia										
RU	DJANKUAT	726	20181099	20190599	33	42.756681	43.2002	2939	1733	BW
RU	DJANKUAT	726	20181099	20190599	41	42.751982	43.1985	2914	2107	BW
RU	DJANKUAT	726	20181099	20190599	402	42.762899	43.1919	3295	3508	BW
RU	DJANKUAT	726	20181099	20190599	403	42.762493	43.1916	3297	3112	BW
RU	DJANKUAT	726	20181099	20190599	404	42.762183	43.1912	3298	3356	BW
RU	DJANKUAT	726	20181099	20190599	405	42.761902	43.1908	3298	4576	BW
RU	DJANKUAT	726	20181099	20190599	406	42.761349	43.1906	3302	4454	BW
RU	DJANKUAT	726	20181099	20190599	407	42.761872	43.1905	3305	3722	BW
RU	DJANKUAT	726	20181099	20190599	417	42.764212	43.1919	3330	1562	BW
RU	DJANKUAT	726	20181099	20190599	409	42.762754	43.1911	3312	5735	BW
RU	DJANKUAT	726	20181099	20190599	40	42.751634	43.1983	2946	2020	BW
RU	DJANKUAT	726	20181099	20190599	410	42.763071	43.1914	3312	5033	BW
RU	DJANKUAT	726	20181099	20190599	411	42.763398	43.1918	3310	3325	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20181099	20190599	412	42.763467	43.1913	3319	4581	BW
RU	DJANKUAT	726	20181099	20190599	413	42.76308	43.191	3319	5893	BW
RU	DJANKUAT	726	20181099	20190599	414	42.762649	43.1907	3319	3910	BW
RU	DJANKUAT	726	20181099	20190599	415	42.762176	43.1904	3321	3636	BW
RU	DJANKUAT	726	20181099	20190599	382	42.758987	43.191	3268	3181	BW
RU	DJANKUAT	726	20181099	20190599	408	42.762356	43.1908	3309	3691	BW
RU	DJANKUAT	726	20181099	20190599	393	42.757674	43.1892	3352	3879	BW
RU	DJANKUAT	726	20181099	20190599	311	42.762628	43.1925	3260	2526	BW
RU	DJANKUAT	726	20181099	20190599	384	42.760042	43.191	3273	3465	BW
RU	DJANKUAT	726	20181099	20190599	385	42.757076	43.1893	3360	3249	BW
RU	DJANKUAT	726	20181099	20190599	386	42.757565	43.1896	3324	4655	BW
RU	DJANKUAT	726	20181099	20190599	387	42.758053	43.19	3306	3903	BW
RU	DJANKUAT	726	20181099	20190599	388	42.758542	43.1903	3298	2958	BW
RU	DJANKUAT	726	20181099	20190599	389	42.760094	43.1894	3350	3459	BW
RU	DJANKUAT	726	20181099	20190599	401	42.763306	43.1923	3297	2990	BW
RU	DJANKUAT	726	20181099	20190599	391	42.758885	43.1893	3351	3129	BW
RU	DJANKUAT	726	20181099	20190599	400	42.76065	43.1907	3285	3473	BW
RU	DJANKUAT	726	20181099	20190599	394	42.759214	43.1907	3282	2989	BW
RU	DJANKUAT	726	20181099	20190599	395	42.75943	43.1902	3309	1788	BW
RU	DJANKUAT	726	20181099	20190599	396	42.759651	43.1898	3332	2044	BW
RU	DJANKUAT	726	20181099	20190599	398	42.760183	43.1906	3285	3346	BW
RU	DJANKUAT	726	20181099	20190599	399	42.759704	43.1907	3290	4448	BW
RU	DJANKUAT	726	20181099	20190599	4	42.750041	43.2024	2799	2430	BW
RU	DJANKUAT	726	20181099	20190599	418	42.764711	43.1922	3334	2385	BW
RU	DJANKUAT	726	20181099	20190599	39	42.752409	43.1982	2939	2310	BW
RU	DJANKUAT	726	20181099	20190599	444	42.763793	43.1907	3338	4246	BW
RU	DJANKUAT	726	20181099	20190599	436	42.76584	43.1941	3307	2266	BW
RU	DJANKUAT	726	20181099	20190599	437	42.765376	43.1938	3301	1809	BW
RU	DJANKUAT	726	20181099	20190599	438	42.764941	43.1936	3311	1412	BW
RU	DJANKUAT	726	20181099	20190599	44	42.75325	43.1996	2909	1208	BW
RU	DJANKUAT	726	20181099	20190599	440	42.765228	43.1941	3301	1382	BW
RU	DJANKUAT	726	20181099	20190599	441	42.765732	43.1944	3302	1870	BW
RU	DJANKUAT	726	20181099	20190599	416	42.761657	43.1902	3323	2965	BW
RU	DJANKUAT	726	20181099	20190599	443	42.763614	43.1903	3352	4520	BW
RU	DJANKUAT	726	20181099	20190599	433	42.766184	43.1948	3347	2083	BW
RU	DJANKUAT	726	20181099	20190599	445	42.764505	43.1908	3350	4504	BW
RU	DJANKUAT	726	20181099	20190599	446	42.765096	43.1908	3366	4590	BW
RU	DJANKUAT	726	20181099	20190599	447	42.765615	43.191	3376	3156	BW
RU	DJANKUAT	726	20181099	20190599	448	42.766401	43.1908	3402	1926	BW
RU	DJANKUAT	726	20181099	20190599	449	42.766825	43.1911	3403	1682	BW
RU	DJANKUAT	726	20181099	20190599	45	42.754409	43.2006	2906	860	BW
RU	DJANKUAT	726	20181099	20190599	450	42.7672	43.1915	3398	1408	BW
RU	DJANKUAT	726	20181099	20190599	442	42.765685	43.1949	3302	2114	BW
RU	DJANKUAT	726	20181099	20190599	427	42.765192	43.1929	3324	5652	BW
RU	DJANKUAT	726	20181099	20190599	419	42.76519	43.1924	3330	4398	BW
RU	DJANKUAT	726	20181099	20190599	42	42.752581	43.1989	2906	1440	BW
RU	DJANKUAT	726	20181099	20190599	420	42.765744	43.1927	3333	5255	BW
RU	DJANKUAT	726	20181099	20190599	421	42.766246	43.1929	3330	2968	BW
RU	DJANKUAT	726	20181099	20190599	422	42.766702	43.1933	3332	2205	BW
RU	DJANKUAT	726	20181099	20190599	423	42.767133	43.1936	3340	2144	BW
RU	DJANKUAT	726	20181099	20190599	424	42.767631	43.1939	3350	1229	BW
RU	DJANKUAT	726	20181099	20190599	435	42.765999	43.1945	3310	2205	BW
RU	DJANKUAT	726	20181099	20190599	426	42.765634	43.1931	3321	3669	BW
RU	DJANKUAT	726	20181099	20190599	434	42.765906	43.1949	3320	1992	BW
RU	DJANKUAT	726	20181099	20190599	428	42.765018	43.193	3317	5194	BW
RU	DJANKUAT	726	20181099	20190599	429	42.765421	43.1933	3317	3151	BW
RU	DJANKUAT	726	20181099	20190599	43	42.752098	43.1991	2897	1440	BW
RU	DJANKUAT	726	20181099	20190599	430	42.765908	43.1936	3317	3120	BW
RU	DJANKUAT	726	20181099	20190599	431	42.766228	43.1939	3315	2327	BW
RU	DJANKUAT	726	20181099	20190599	432	42.766369	43.1944	3317	2205	BW
RU	DJANKUAT	726	20181099	20190599	381	42.762888	43.1937	3243	3158	BW
RU	DJANKUAT	726	20181099	20190599	425	42.766076	43.1933	3324	2937	BW
RU	DJANKUAT	726	20181099	20190599	339	42.751951	43.1925	3258	3339	BW
RU	DJANKUAT	726	20181099	20190599	331	42.755698	43.1917	3237	3780	BW
RU	DJANKUAT	726	20181099	20190599	332	42.755118	43.1917	3244	2425	BW
RU	DJANKUAT	726	20181099	20190599	333	42.754541	43.1916	3248	2961	BW
RU	DJANKUAT	726	20181099	20190599	334	42.754014	43.1918	3248	2803	BW
RU	DJANKUAT	726	20181099	20190599	335	42.753611	43.1921	3247	2488	BW
RU	DJANKUAT	726	20181099	20190599	336	42.753181	43.1924	3242	2016	BW
RU	DJANKUAT	726	20181099	20190599	346	42.755428	43.1913	3267	3528	BW
RU	DJANKUAT	726	20181099	20190599	338	42.75227	43.1929	3241	2205	BW
RU	DJANKUAT	726	20181099	20190599	327	42.753371	43.1928	3225	2841	BW
RU	DJANKUAT	726	20181099	20190599	34	42.757049	43.2009	2934	1501	BW
RU	DJANKUAT	726	20181099	20190599	340	42.752346	43.1922	3262	3748	BW
RU	DJANKUAT	726	20181099	20190599	341	42.752768	43.1919	3263	4126	BW
RU	DJANKUAT	726	20181099	20190599	342	42.753289	43.1917	3269	4252	BW
RU	DJANKUAT	726	20181099	20190599	343	42.753736	43.1914	3272	3622	BW
RU	DJANKUAT	726	20181099	20190599	344	42.754257	43.1913	3267	3906	BW
RU	DJANKUAT	726	20181099	20190599	383	42.759516	43.1911	3263	3181	BW
RU	DJANKUAT	726	20181099	20190599	337	42.752694	43.1926	3242	1921	BW
RU	DJANKUAT	726	20181099	20190599	320	42.762281	43.1965	3144	1916	BW
RU	DJANKUAT	726	20181099	20190599	312	42.763245	43.1932	3265	3289	BW
RU	DJANKUAT	726	20181099	20190599	313	42.763658	43.1942	3266	1891	BW
RU	DJANKUAT	726	20181099	20190599	314	42.76042	43.1924	3226	3517	BW
RU	DJANKUAT	726	20181099	20190599	315	42.761422	43.1927	3226	3207	BW
RU	DJANKUAT	726	20181099	20190599	316	42.762257	43.1933	3226	4323	BW
RU	DJANKUAT	726	20181099	20190599	317	42.762681	43.1944	3226	2204	BW
RU	DJANKUAT	726	20181099	20190599	318	42.759971	43.197	3072	1728	BW
RU	DJANKUAT	726	20181099	20190599	330	42.756256	43.1915	3244	3937	BW
RU	DJANKUAT	726	20181099	20190599	32	42.755638	43.1996	2938	1298	BW
RU	DJANKUAT	726	20181099	20190599	329	42.75684	43.1915	3227	3559	BW
RU	DJANKUAT	726	20181099	20190599	321	42.763169	43.1962	3171	1856	BW
RU	DJANKUAT	726	20181099	20190599	322	42.76138	43.1974	3081	1905	BW
RU	DJANKUAT	726	20181099	20190599	323	42.761965	43.1979	3067	2348	BW
RU	DJANKUAT	726	20181099	20190599	324	42.755275	43.1905	3310	3483	BW
RU	DJANKUAT	726	20181099	20190599	325	42.772603	43.1901	3532	2077	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20181099	20190599	326	42.752789	43.193	3231	2484	BW
RU	DJANKUAT	726	20181099	20190599	347	42.756016	43.1913	3258	2110	BW
RU	DJANKUAT	726	20181099	20190599	319	42.763117	43.197	3139	3056	BW
RU	DJANKUAT	726	20181099	20190599	374	42.760288	43.1918	3253	3060	BW
RU	DJANKUAT	726	20181099	20190599	366	42.756974	43.19	3309	4998	BW
RU	DJANKUAT	726	20181099	20190599	367	42.756426	43.1902	3310	2863	BW
RU	DJANKUAT	726	20181099	20190599	368	42.755849	43.1903	3309	2466	BW
RU	DJANKUAT	726	20181099	20190599	37	42.755567	43.2001	2930	1556	BW
RU	DJANKUAT	726	20181099	20190599	370	42.759306	43.192	3236	3166	BW
RU	DJANKUAT	726	20181099	20190599	371	42.759039	43.1916	3246	3264	BW
RU	DJANKUAT	726	20181099	20190599	345	42.754844	43.1913	3261	3843	BW
RU	DJANKUAT	726	20181099	20190599	373	42.759715	43.1918	3247	3028	BW
RU	DJANKUAT	726	20181099	20190599	363	42.757267	43.1907	3272	2016	BW
RU	DJANKUAT	726	20181099	20190599	375	42.760841	43.1919	3243	3190	BW
RU	DJANKUAT	726	20181099	20190599	376	42.761311	43.1921	3244	2865	BW
RU	DJANKUAT	726	20181099	20190599	377	42.761765	43.1924	3246	3320	BW
RU	DJANKUAT	726	20181099	20190599	378	42.762272	43.1926	3254	3450	BW
RU	DJANKUAT	726	20181099	20190599	379	42.762633	43.1929	3244	3418	BW
RU	DJANKUAT	726	20181099	20190599	38	42.753384	43.1987	2927	2107	BW
RU	DJANKUAT	726	20181099	20190599	380	42.762803	43.1933	3245	3158	BW
RU	DJANKUAT	726	20181099	20190599	372	42.758385	43.1905	3284	2898	BW
RU	DJANKUAT	726	20181099	20190599	357	42.752217	43.1916	3282	2488	BW
RU	DJANKUAT	726	20181099	20190599	348	42.756561	43.1912	3259	2047	BW
RU	DJANKUAT	726	20181099	20190599	349	42.757136	43.1911	3259	2551	BW
RU	DJANKUAT	726	20181099	20190599	35	42.756395	43.2015	2918	1584	BW
RU	DJANKUAT	726	20181099	20190599	350	42.75772	43.1911	3259	2520	BW
RU	DJANKUAT	726	20181099	20190599	351	42.758301	43.1912	3259	1701	BW
RU	DJANKUAT	726	20181099	20190599	353	42.754283	43.191	3279	3748	BW
RU	DJANKUAT	726	20181099	20190599	354	42.753716	43.1911	3285	3465	BW
RU	DJANKUAT	726	20181099	20190599	365	42.757589	43.19	3295	4205	BW
RU	DJANKUAT	726	20181099	20190599	356	42.752767	43.1916	3281	3087	BW
RU	DJANKUAT	726	20181099	20190599	364	42.757878	43.1908	3273	1953	BW
RU	DJANKUAT	726	20181099	20190599	358	42.751862	43.192	3281	3118	BW
RU	DJANKUAT	726	20181099	20190599	359	42.754855	43.191	3277	3528	BW
RU	DJANKUAT	726	20181099	20190599	36	42.756196	43.2009	2919	2106	BW
RU	DJANKUAT	726	20181099	20190599	360	42.755469	43.191	3272	3150	BW
RU	DJANKUAT	726	20181099	20190599	361	42.756076	43.191	3273	2047	BW
RU	DJANKUAT	726	20181099	20190599	362	42.756663	43.1908	3275	1260	BW
RU	DJANKUAT	726	20181099	20190599	453	42.768276	43.1925	3408	1164	BW
RU	DJANKUAT	726	20181099	20190599	355	42.753269	43.1914	3286	2992	BW
RU	DJANKUAT	726	20181099	20190599	60	42.754987	43.202	2880	1386	BW
RU	DJANKUAT	726	20181099	20190599	538	42.757249	43.2	2944	1380	BW
RU	DJANKUAT	726	20181099	20190599	54	42.751194	43.199	2906	1556	BW
RU	DJANKUAT	726	20181099	20190599	55	42.750437	43.199	2894	2310	BW
RU	DJANKUAT	726	20181099	20190599	56	42.751419	43.1995	2881	1730	BW
RU	DJANKUAT	726	20181099	20190599	57	42.751705	43.1997	2872	1150	BW
RU	DJANKUAT	726	20181099	20190599	58	42.752353	43.2003	2881	1469	BW
RU	DJANKUAT	726	20181099	20190599	68	42.750959	43.2036	2767	2085	BW
RU	DJANKUAT	726	20181099	20190599	6	42.751318	43.2018	2824	1995	BW
RU	DJANKUAT	726	20181099	20190599	535	42.772211	43.1893	3561	3136	BW
RU	DJANKUAT	726	20181099	20190599	61	42.754193	43.2021	2867	1299	BW
RU	DJANKUAT	726	20181099	20190599	62	42.752898	43.2018	2858	1270	BW
RU	DJANKUAT	726	20181099	20190599	63	42.753287	43.2023	2849	1635	BW
RU	DJANKUAT	726	20181099	20190599	64	42.753132	43.2029	2821	1837	BW
RU	DJANKUAT	726	20181099	20190599	65	42.752361	43.2029	2816	1628	BW
RU	DJANKUAT	726	20181099	20190599	66	42.751944	43.2033	2793	1135	BW
RU	DJANKUAT	726	20181099	20190599	451	42.767704	43.1917	3403	1377	BW
RU	DJANKUAT	726	20181099	20190599	59	42.753727	43.2016	2875	1584	BW
RU	DJANKUAT	726	20181099	20190599	529	42.77198	43.1904	3503	3160	BW
RU	DJANKUAT	726	20181099	20190599	520	42.771413	43.1912	3468	4052	BW
RU	DJANKUAT	726	20181099	20190599	521	42.7713	43.1908	3473	3404	BW
RU	DJANKUAT	726	20181099	20190599	522	42.7711	43.1903	3489	3172	BW
RU	DJANKUAT	726	20181099	20190599	523	42.771944	43.1914	3470	4203	BW
RU	DJANKUAT	726	20181099	20190599	524	42.772276	43.1911	3489	3275	BW
RU	DJANKUAT	726	20181099	20190599	525	42.772477	43.1907	3504	3276	BW
RU	DJANKUAT	726	20181099	20190599	526	42.773179	43.1915	3511	4755	BW
RU	DJANKUAT	726	20181099	20190599	537	42.766618	43.1941	3329	1605	BW
RU	DJANKUAT	726	20181099	20190599	528	42.771399	43.1902	3512	3056	BW
RU	DJANKUAT	726	20181099	20190599	536	42.766574	43.1946	3332	2591	BW
RU	DJANKUAT	726	20181099	20190599	53	42.752023	43.1995	2879	1991	BW
RU	DJANKUAT	726	20181099	20190599	530	42.772559	43.1906	3510	3392	BW
RU	DJANKUAT	726	20181099	20190599	531	42.773109	43.1908	3516	3334	BW
RU	DJANKUAT	726	20181099	20190599	532	42.77339	43.1912	3519	2928	BW
RU	DJANKUAT	726	20181099	20190599	533	42.771446	43.1898	3525	3194	BW
RU	DJANKUAT	726	20181099	20190599	534	42.771744	43.1894	3547	3107	BW
RU	DJANKUAT	726	20181099	20190599	69	42.75032	43.1992	2884	860	BW
RU	DJANKUAT	726	20181099	20190599	527	42.77299	43.1918	3503	3508	BW
RU	DJANKUAT	726	20181099	20190599	94	42.749654	43.2025	2792	1099	BW
RU	DJANKUAT	726	20181099	20190599	87	42.748243	43.2014	2829	1195	BW
RU	DJANKUAT	726	20181099	20190599	88	42.747919	43.2017	2808	1824	BW
RU	DJANKUAT	726	20181099	20190599	89	42.747657	43.2021	2787	1273	BW
RU	DJANKUAT	726	20181099	20190599	9	42.752558	43.2024	2835	1270	BW
RU	DJANKUAT	726	20181099	20190599	90	42.748506	43.2024	2780	519	BW
RU	DJANKUAT	726	20181099	20190599	91	42.747693	43.2026	2771	2694	BW
RU	DJANKUAT	726	20181099	20190599	67	42.751298	43.2034	2779	2114	BW
RU	DJANKUAT	726	20181099	20190599	93	42.748883	43.2028	2766	935	BW
RU	DJANKUAT	726	20181099	20190599	84	42.750339	43.2021	2807	2210	BW
RU	DJANKUAT	726	20181099	20190599	95	42.748706	43.2032	2748	1689	BW
RU	DJANKUAT	726	20181099	20190599	96	42.748142	43.2032	2753	2675	BW
RU	DJANKUAT	726	20181099	20190599	97	42.747502	43.2034	2743	906	BW
RU	DJANKUAT	726	20181099	20190599	98	42.746941	43.2034	2738	4212	BW
RU	DJANKUAT	726	20181099	20190599	99	42.74632	43.2032	2750	2733	BW
RU	DJANKUAT	726	20181099	20190599	1	42.749404	43.2032	2749	1158	BW
RU	DJANKUAT	726	20181099	20190599	328	42.753999	43.1926	3223	3199	BW
RU	DJANKUAT	726	20181099	20190599	92	42.749057	43.2025	2765	1331	BW
RU	DJANKUAT	726	20181099	20190599	78	42.749372	43.2004	2851	1613	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20181099	20190599	7	42.751817	43.2011	2864	1637	BW
RU	DJANKUAT	726	20181099	20190599	70	42.749668	43.1996	2871	2409	BW
RU	DJANKUAT	726	20181099	20190599	71	42.750545	43.1999	2864	1336	BW
RU	DJANKUAT	726	20181099	20190599	72	42.7511	43.2004	2867	1858	BW
RU	DJANKUAT	726	20181099	20190599	73	42.751528	43.2001	2871	1191	BW
RU	DJANKUAT	726	20181099	20190599	74	42.751389	43.2007	2874	698	BW
RU	DJANKUAT	726	20181099	20190599	75	42.751178	43.2013	2847	2251	BW
RU	DJANKUAT	726	20181099	20190599	86	42.749453	43.2019	2799	2036	BW
RU	DJANKUAT	726	20181099	20190599	77	42.750034	43.2005	2850	1613	BW
RU	DJANKUAT	726	20181099	20190599	85	42.749784	43.202	2801	1108	BW
RU	DJANKUAT	726	20181099	20190599	79	42.748689	43.2007	2847	3614	BW
RU	DJANKUAT	726	20181099	20190599	8	42.75219	43.2017	2849	1399	BW
RU	DJANKUAT	726	20181099	20190599	80	42.749603	43.2009	2835	2686	BW
RU	DJANKUAT	726	20181099	20190599	81	42.750508	43.2013	2837	1236	BW
RU	DJANKUAT	726	20181099	20190599	82	42.750916	43.2017	2827	2744	BW
RU	DJANKUAT	726	20181099	20190599	83	42.750993	43.2022	2803	2123	BW
RU	DJANKUAT	726	20181099	20190599	518	42.766965	43.1893	3488	3346	BW
RU	DJANKUAT	726	20181099	20190599	76	42.750656	43.201	2842	1323	BW
RU	DJANKUAT	726	20181099	20190599	478	42.771551	43.1934	3494	2999	BW
RU	DJANKUAT	726	20181099	20190599	470	42.770184	43.192	3444	2669	BW
RU	DJANKUAT	726	20181099	20190599	471	42.769708	43.1917	3444	2628	BW
RU	DJANKUAT	726	20181099	20190599	472	42.769324	43.1914	3440	2778	BW
RU	DJANKUAT	726	20181099	20190599	473	42.770572	43.1917	3450	3245	BW
RU	DJANKUAT	726	20181099	20190599	474	42.770946	43.192	3448	3395	BW
RU	DJANKUAT	726	20181099	20190599	475	42.771399	43.1923	3451	3785	BW
RU	DJANKUAT	726	20181099	20190599	52	42.752836	43.1998	2897	1382	BW
RU	DJANKUAT	726	20181099	20190599	477	42.771757	43.193	3461	2909	BW
RU	DJANKUAT	726	20181099	20190599	468	42.76819	43.1909	3432	1488	BW
RU	DJANKUAT	726	20181099	20190599	479	42.769602	43.1911	3445	3168	BW
RU	DJANKUAT	726	20181099	20190599	48	42.755711	43.2019	2896	1091	BW
RU	DJANKUAT	726	20181099	20190599	480	42.770208	43.1912	3450	3048	BW
RU	DJANKUAT	726	20181099	20190599	481	42.770793	43.1914	3456	3432	BW
RU	DJANKUAT	726	20181099	20190599	482	42.771893	43.1923	3463	2195	BW
RU	DJANKUAT	726	20181099	20190599	483	42.771635	43.1919	3459	2345	BW
RU	DJANKUAT	726	20181099	20190599	484	42.771218	43.1915	3458	3245	BW
RU	DJANKUAT	726	20181099	20190599	476	42.771664	43.1926	3453	2219	BW
RU	DJANKUAT	726	20181099	20190599	461	42.765966	43.1905	3399	2058	BW
RU	DJANKUAT	726	20181099	20190599	390	42.759497	43.1893	3347	2979	BW
RU	DJANKUAT	726	20181099	20190599	454	42.766833	43.1905	3421	3949	BW
RU	DJANKUAT	726	20181099	20190599	455	42.767347	43.1903	3437	3618	BW
RU	DJANKUAT	726	20181099	20190599	456	42.767939	43.1903	3435	5148	BW
RU	DJANKUAT	726	20181099	20190599	457	42.768493	43.1905	3442	4938	BW
RU	DJANKUAT	726	20181099	20190599	458	42.767651	43.1908	3429	2208	BW
RU	DJANKUAT	726	20181099	20190599	459	42.767098	43.1907	3421	1998	BW
RU	DJANKUAT	726	20181099	20190599	47	42.755966	43.2013	2906	1874	BW
RU	DJANKUAT	726	20181099	20190599	460	42.766536	43.1906	3412	2238	BW
RU	DJANKUAT	726	20181099	20190599	469	42.770596	43.1924	3441	2969	BW
RU	DJANKUAT	726	20181099	20190599	462	42.770036	43.193	3420	1188	BW
RU	DJANKUAT	726	20181099	20190599	463	42.769481	43.1929	3419	1218	BW
RU	DJANKUAT	726	20181099	20190599	464	42.769097	43.1925	3422	1038	BW
RU	DJANKUAT	726	20181099	20190599	465	42.768863	43.1921	3424	978	BW
RU	DJANKUAT	726	20181099	20190599	466	42.768729	43.1917	3429	1308	BW
RU	DJANKUAT	726	20181099	20190599	467	42.768497	43.1913	3432	1278	BW
RU	DJANKUAT	726	20181099	20190599	487	42.769896	43.1907	3456	3558	BW
RU	DJANKUAT	726	20181099	20190599	46	42.755297	43.2011	2911	1961	BW
RU	DJANKUAT	726	20181099	20190599	511	42.770885	43.1904	3483	2476	BW
RU	DJANKUAT	726	20181099	20190599	485	42.770875	43.1912	3460	3185	BW
RU	DJANKUAT	726	20181099	20190599	504	42.77205	43.1916	3474	4715	BW
RU	DJANKUAT	726	20181099	20190599	505	42.772357	43.192	3478	5345	BW
RU	DJANKUAT	726	20181099	20190599	506	42.7725	43.1924	3483	5765	BW
RU	DJANKUAT	726	20181099	20190599	507	42.772868	43.1914	3502	3392	BW
RU	DJANKUAT	726	20181099	20190599	508	42.772512	43.191	3498	3044	BW
RU	DJANKUAT	726	20181099	20190599	509	42.772018	43.1907	3491	2870	BW
RU	DJANKUAT	726	20181099	20190599	502	42.771276	43.1909	3471	4055	BW
RU	DJANKUAT	726	20181099	20190599	510	42.771418	43.1906	3482	2940	BW
RU	DJANKUAT	726	20181099	20190599	501	42.770704	43.1908	3466	4025	BW
RU	DJANKUAT	726	20181099	20190599	512	42.770401	43.1901	3490	2360	BW
RU	DJANKUAT	726	20181099	20190599	513	42.769941	43.1898	3488	2331	BW
RU	DJANKUAT	726	20181099	20190599	514	42.769374	43.1896	3481	2418	BW
RU	DJANKUAT	726	20181099	20190599	515	42.768774	43.1895	3489	2534	BW
RU	DJANKUAT	726	20181099	20190599	516	42.768166	43.1894	3484	2795	BW
RU	DJANKUAT	726	20181099	20190599	517	42.767584	43.1893	3494	2969	BW
RU	DJANKUAT	726	20181099	20190599	452	42.76806	43.192	3407	1164	BW
RU	DJANKUAT	726	20181099	20190599	51	42.754243	43.2012	2893	1433	BW
RU	DJANKUAT	726	20181099	20190599	495	42.767426	43.1898	3464	2838	BW
RU	DJANKUAT	726	20181099	20190599	519	42.766358	43.1894	3480	3984	BW
RU	DJANKUAT	726	20181099	20190599	488	42.769401	43.1905	3450	3558	BW
RU	DJANKUAT	726	20181099	20190599	489	42.768899	43.1902	3455	3588	BW
RU	DJANKUAT	726	20181099	20190599	49	42.755468	43.2015	2897	2396	BW
RU	DJANKUAT	726	20181099	20190599	490	42.768316	43.1901	3446	3528	BW
RU	DJANKUAT	726	20181099	20190599	491	42.767717	43.1901	3446	2868	BW
RU	DJANKUAT	726	20181099	20190599	492	42.76717	43.1899	3449	2868	BW
RU	DJANKUAT	726	20181099	20190599	503	42.771749	43.1912	3474	4175	BW
RU	DJANKUAT	726	20181099	20190599	494	42.766831	43.1896	3468	3078	BW
RU	DJANKUAT	726	20181099	20190599	486	42.770329	43.191	3455	3365	BW
RU	DJANKUAT	726	20181099	20190599	496	42.768038	43.1898	3468	3228	BW
RU	DJANKUAT	726	20181099	20190599	497	42.768619	43.1899	3468	3558	BW
RU	DJANKUAT	726	20181099	20190599	498	42.769231	43.19	3473	3558	BW
RU	DJANKUAT	726	20181099	20190599	499	42.769701	43.1903	3464	3618	BW
RU	DJANKUAT	726	20181099	20190599	5	42.751231	43.2023	2806	2088	BW
RU	DJANKUAT	726	20181099	20190599	50	42.754765	43.2017	2888	946	BW
RU	DJANKUAT	726	20181099	20190599	500	42.770164	43.1905	3469	3948	BW
RU	DJANKUAT	726	20181099	20190599	493	42.766577	43.1898	3447	2868	BW
RU	DJANKUAT	726	20181099	20190599	183	42.755475	43.199	2948	1389	BW
RU	DJANKUAT	726	20181099	20190599	177	42.756582	43.1979	2985	2670	BW
RU	DJANKUAT	726	20181099	20190599	178	42.756485	43.1983	2975	2344	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20181099	20190599	179	42.755736	43.1981	2969	2723	BW
RU	DJANKUAT	726	20181099	20190599	18	42.753216	43.2008	2889	744	BW
RU	DJANKUAT	726	20181099	20190599	180	42.754935	43.1978	2968	2404	BW
RU	DJANKUAT	726	20181099	20190599	22	42.754249	43.1986	2940	1513	BW
RU	DJANKUAT	726	20181099	20190599	182	42.753637	43.1981	2959	2288	BW
RU	DJANKUAT	726	20181099	20190599	174	42.755978	43.1974	2999	2438	BW
RU	DJANKUAT	726	20181099	20190599	184	42.757424	43.1984	2977	1561	BW
RU	DJANKUAT	726	20181099	20190599	185	42.758234	43.1986	2975	836	BW
RU	DJANKUAT	726	20181099	20190599	186	42.758814	43.1991	2973	1504	BW
RU	DJANKUAT	726	20181099	20190599	187	42.759086	43.1986	2986	1740	BW
RU	DJANKUAT	726	20181099	20190599	188	42.759437	43.1992	2984	1357	BW
RU	DJANKUAT	726	20181099	20190599	189	42.759292	43.1996	2984	1032	BW
RU	DJANKUAT	726	20181099	20190599	181	42.754014	43.1977	2973	1940	BW
RU	DJANKUAT	726	20181099	20190599	169	42.760706	43.1987	3020	1078	BW
RU	DJANKUAT	726	20181099	20190599	161	42.756191	43.1967	3037	2483	BW
RU	DJANKUAT	726	20181099	20190599	162	42.755512	43.1969	3030	1193	BW
RU	DJANKUAT	726	20181099	20190599	163	42.756013	43.197	3018	1583	BW
RU	DJANKUAT	726	20181099	20190599	164	42.757033	43.1971	3021	1349	BW
RU	DJANKUAT	726	20181099	20190599	165	42.757899	43.1975	3019	2043	BW
RU	DJANKUAT	726	20181099	20190599	166	42.758644	43.1978	3018	1953	BW
RU	DJANKUAT	726	20181099	20190599	176	42.755436	43.1976	2984	2583	BW
RU	DJANKUAT	726	20181099	20190599	168	42.760048	43.1982	3022	2338	BW
RU	DJANKUAT	726	20181099	20190599	175	42.754901	43.1973	3004	2815	BW
RU	DJANKUAT	726	20181099	20190599	17	42.752975	43.2013	2874	921	BW
RU	DJANKUAT	726	20181099	20190599	170	42.76045	43.199	3011	1198	BW
RU	DJANKUAT	726	20181099	20190599	171	42.758974	43.1981	2999	3482	BW
RU	DJANKUAT	726	20181099	20190599	172	42.757842	43.1981	2990	2577	BW
RU	DJANKUAT	726	20181099	20190599	173	42.757118	43.1975	3003	1887	BW
RU	DJANKUAT	726	20181099	20190599	191	42.761148	43.1978	3061	2436	BW
RU	DJANKUAT	726	20181099	20190599	167	42.759353	43.1979	3023	5368	BW
RU	DJANKUAT	726	20181099	20190599	213	42.76489	43.199	3116	3988	BW
RU	DJANKUAT	726	20181099	20190599	19	42.753716	43.2005	2900	935	BW
RU	DJANKUAT	726	20181099	20190599	207	42.766615	43.1984	3201	1054	BW
RU	DJANKUAT	726	20181099	20190599	208	42.765713	43.1979	3195	2159	BW
RU	DJANKUAT	726	20181099	20190599	209	42.765929	43.1988	3163	3616	BW
RU	DJANKUAT	726	20181099	20190599	21	42.754209	43.1992	2925	1063	BW
RU	DJANKUAT	726	20181099	20190599	210	42.765263	43.1983	3152	3058	BW
RU	DJANKUAT	726	20181099	20190599	205	42.76704	43.1987	3212	3322	BW
RU	DJANKUAT	726	20181099	20190599	212	42.764499	43.1982	3131	3027	BW
RU	DJANKUAT	726	20181099	20190599	204	42.76658	43.1979	3226	4235	BW
RU	DJANKUAT	726	20181099	20190599	214	42.764167	43.1985	3101	2739	BW
RU	DJANKUAT	726	20181099	20190599	215	42.764166	43.2005	3088	3349	BW
RU	DJANKUAT	726	20181099	20190599	216	42.763565	43.2002	3073	2403	BW
RU	DJANKUAT	726	20181099	20190599	217	42.763834	43.1987	3088	2769	BW
RU	DJANKUAT	726	20181099	20190599	218	42.763228	43.1982	3087	3440	BW
RU	DJANKUAT	726	20181099	20190599	219	42.763035	43.1994	3061	3410	BW
RU	DJANKUAT	726	20181099	20190599	211	42.76401	43.1976	3148	3585	BW
RU	DJANKUAT	726	20181099	20190599	199	42.766706	43.1989	3195	3523	BW
RU	DJANKUAT	726	20181099	20190599	159	42.757639	43.197	3034	2003	BW
RU	DJANKUAT	726	20181099	20190599	192	42.762018	43.1984	3058	878	BW
RU	DJANKUAT	726	20181099	20190599	193	42.762867	43.1988	3062	2617	BW
RU	DJANKUAT	726	20181099	20190599	194	42.763508	43.1991	3074	4020	BW
RU	DJANKUAT	726	20181099	20190599	195	42.763929	43.1996	3084	3812	BW
RU	DJANKUAT	726	20181099	20190599	196	42.765398	43.1999	3123	2903	BW
RU	DJANKUAT	726	20181099	20190599	206	42.767297	43.1991	3208	2503	BW
RU	DJANKUAT	726	20181099	20190599	198	42.766552	43.1997	3169	3306	BW
RU	DJANKUAT	726	20181099	20190599	190	42.761065	43.1981	3039	2070	BW
RU	DJANKUAT	726	20181099	20190599	2	42.749528	43.2027	2775	2875	BW
RU	DJANKUAT	726	20181099	20190599	20	42.754138	43.2	2915	802	BW
RU	DJANKUAT	726	20181099	20190599	200	42.767358	43.1996	3206	1747	BW
RU	DJANKUAT	726	20181099	20190599	201	42.768809	43.1993	3274	1936	BW
RU	DJANKUAT	726	20181099	20190599	202	42.767975	43.1991	3242	2566	BW
RU	DJANKUAT	726	20181099	20190599	203	42.767389	43.1984	3236	2629	BW
RU	DJANKUAT	726	20181099	20190599	197	42.765679	43.1992	3141	4639	BW
RU	DJANKUAT	726	20181099	20190599	122	42.76201	43.1947	3194	3319	BW
RU	DJANKUAT	726	20181099	20190599	129	42.760987	43.1962	3124	1604	BW
RU	DJANKUAT	726	20181099	20190599	116	42.758158	43.1926	3217	3002	BW
RU	DJANKUAT	726	20181099	20190599	117	42.759622	43.1932	3214	2435	BW
RU	DJANKUAT	726	20181099	20190599	118	42.7602	43.1938	3198	2719	BW
RU	DJANKUAT	726	20181099	20190599	119	42.759234	43.1936	3198	2152	BW
RU	DJANKUAT	726	20181099	20190599	12	42.750484	43.2034	2765	1937	BW
RU	DJANKUAT	726	20181099	20190599	114	42.760481	43.193	3216	2845	BW
RU	DJANKUAT	726	20181099	20190599	121	42.75976	43.194	3192	2435	BW
RU	DJANKUAT	726	20181099	20190599	113	42.761173	43.1935	3211	2435	BW
RU	DJANKUAT	726	20181099	20190599	123	42.762475	43.1953	3194	2655	BW
RU	DJANKUAT	726	20181099	20190599	124	42.761742	43.1949	3181	2842	BW
RU	DJANKUAT	726	20181099	20190599	125	42.762097	43.1955	3177	1897	BW
RU	DJANKUAT	726	20181099	20190599	126	42.761582	43.1955	3160	3513	BW
RU	DJANKUAT	726	20181099	20190599	127	42.762124	43.196	3161	2122	BW
RU	DJANKUAT	726	20181099	20190599	160	42.757012	43.1967	3030	3713	BW
RU	DJANKUAT	726	20181099	20190599	120	42.758723	43.1939	3199	1081	BW
RU	DJANKUAT	726	20181099	20190599	107	42.758788	43.1954	3125	3098	BW
RU	DJANKUAT	726	20181099	20190599	10	42.751767	43.2027	2811	1763	BW
RU	DJANKUAT	726	20181099	20190599	100	42.760022	43.1984	3011	1713	BW
RU	DJANKUAT	726	20181099	20190599	101	42.760247	43.1979	3033	1998	BW
RU	DJANKUAT	726	20181099	20190599	102	42.760363	43.1976	3051	2299	BW
RU	DJANKUAT	726	20181099	20190599	103	42.760707	43.1974	3069	2059	BW
RU	DJANKUAT	726	20181099	20190599	104	42.760375	43.1968	3081	3079	BW
RU	DJANKUAT	726	20181099	20190599	115	42.75941	43.1923	3223	3197	BW
RU	DJANKUAT	726	20181099	20190599	106	42.758922	43.1961	3094	2239	BW
RU	DJANKUAT	726	20181099	20190599	13	42.750399	43.2038	2754	1541	BW
RU	DJANKUAT	726	20181099	20190599	108	42.760183	43.1957	3127	2732	BW
RU	DJANKUAT	726	20181099	20190599	109	42.760944	43.1957	3141	2000	BW
RU	DJANKUAT	726	20181099	20190599	11	42.751076	43.2031	2782	2395	BW
RU	DJANKUAT	726	20181099	20190599	110	42.761444	43.1945	3185	2043	BW
RU	DJANKUAT	726	20181099	20190599	111	42.760929	43.195	3162	2202	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20181099	20190599	112	42.761686	43.1941	3199	1881	BW
RU	DJANKUAT	726	20181099	20190599	105	42.760294	43.1962	3106	1579	BW
RU	DJANKUAT	726	20181099	20190599	153	42.756361	43.1962	3071	2217	BW
RU	DJANKUAT	726	20181099	20190599	128	42.761433	43.1958	3151	2580	BW
RU	DJANKUAT	726	20181099	20190599	310	42.76157	43.1919	3263	3045	BW
RU	DJANKUAT	726	20181099	20190599	148	42.757624	43.1959	3084	2259	BW
RU	DJANKUAT	726	20181099	20190599	149	42.758578	43.1963	3081	1497	BW
RU	DJANKUAT	726	20181099	20190599	15	42.749537	43.2034	2753	700	BW
RU	DJANKUAT	726	20181099	20190599	150	42.759291	43.1969	3071	1291	BW
RU	DJANKUAT	726	20181099	20190599	392	42.758272	43.1893	3349	3789	BW
RU	DJANKUAT	726	20181099	20190599	152	42.757489	43.1961	3060	3267	BW
RU	DJANKUAT	726	20181099	20190599	144	42.759695	43.1964	3096	1702	BW
RU	DJANKUAT	726	20181099	20190599	154	42.755722	43.1964	3067	833	BW
RU	DJANKUAT	726	20181099	20190599	155	42.756721	43.1963	3054	3173	BW
RU	DJANKUAT	726	20181099	20190599	156	42.757768	43.1965	3051	1823	BW
RU	DJANKUAT	726	20181099	20190599	157	42.758593	43.1971	3048	1823	BW
RU	DJANKUAT	726	20181099	20190599	158	42.758628	43.1976	3034	1523	BW
RU	DJANKUAT	726	20181099	20190599	147	42.757025	43.1957	3096	2367	BW
RU	DJANKUAT	726	20181099	20190599	151	42.758221	43.1964	3069	1917	BW
RU	DJANKUAT	726	20181099	20190599	138	42.761742	43.1969	3113	1762	BW
RU	DJANKUAT	726	20181099	20190599	130	42.759942	43.196	3111	2599	BW
RU	DJANKUAT	726	20181099	20190599	131	42.759735	43.1946	3170	2668	BW
RU	DJANKUAT	726	20181099	20190599	132	42.758415	43.1947	3155	2577	BW
RU	DJANKUAT	726	20181099	20190599	133	42.759788	43.1952	3135	3126	BW
RU	DJANKUAT	726	20181099	20190599	134	42.757843	43.195	3137	1936	BW
RU	DJANKUAT	726	20181099	20190599	135	42.757049	43.1952	3129	1967	BW
RU	DJANKUAT	726	20181099	20190599	146	42.758314	43.1957	3098	2987	BW
RU	DJANKUAT	726	20181099	20190599	137	42.761077	43.1966	3111	2602	BW
RU	DJANKUAT	726	20181099	20190599	16	42.748961	43.2035	2742	2585	BW
RU	DJANKUAT	726	20181099	20190599	139	42.762489	43.1972	3115	1882	BW
RU	DJANKUAT	726	20181099	20190599	14	42.749955	43.2035	2751	2341	BW
RU	DJANKUAT	726	20181099	20190599	140	42.762886	43.1976	3107	3262	BW
RU	DJANKUAT	726	20181099	20190599	141	42.761905	43.1972	3104	2161	BW
RU	DJANKUAT	726	20181099	20190599	142	42.761326	43.1971	3096	2311	BW
RU	DJANKUAT	726	20181099	20190599	143	42.760565	43.1966	3096	2902	BW
RU	DJANKUAT	726	20181099	20190599	136	42.758103	43.1954	3114	3077	BW
RU	DJANKUAT	726	20181099	20190599	262	42.756733	43.1926	3210	2695	BW
RU	DJANKUAT	726	20181099	20190599	268	42.758847	43.1914	3258	2816	BW
RU	DJANKUAT	726	20181099	20190599	267	42.751186	43.1916	3324	1740	BW
RU	DJANKUAT	726	20181099	20190599	266	42.751459	43.1923	3278	3328	BW
RU	DJANKUAT	726	20181099	20190599	265	42.758181	43.1902	3300	4166	BW
RU	DJANKUAT	726	20181099	20190599	305	42.763728	43.1926	3298	2189	BW
RU	DJANKUAT	726	20181099	20190599	220	42.762953	43.1999	3063	2098	BW
RU	DJANKUAT	726	20181099	20190599	286	42.767689	43.1929	3367	2933	BW
RU	DJANKUAT	726	20181099	20190599	287	42.766451	43.1926	3345	2140	BW
RU	DJANKUAT	726	20181099	20190599	306	42.763125	43.1941	3249	1786	BW
RU	DJANKUAT	726	20181099	20190599	145	42.75924	43.196	3107	1367	BW
RU	DJANKUAT	726	20181099	20190599	289	42.765422	43.1922	3340	3419	BW
RU	DJANKUAT	726	20181099	20190599	263	42.757803	43.1918	3239	4483	BW
RU	DJANKUAT	726	20181099	20190599	270	42.75221	43.1934	3224	2167	BW
RU	DJANKUAT	726	20181099	20190599	261	42.755246	43.1926	3210	3345	BW
RU	DJANKUAT	726	20181099	20190599	260	42.755148	43.1943	3167	2521	BW
RU	DJANKUAT	726	20181099	20190599	26	42.758182	43.2003	2963	660	BW
RU	DJANKUAT	726	20181099	20190599	259	42.756164	43.1944	3165	1806	BW
RU	DJANKUAT	726	20181099	20190599	307	42.760307	43.1915	3259	2770	BW
RU	DJANKUAT	726	20181099	20190599	308	42.761414	43.1914	3269	2953	BW
RU	DJANKUAT	726	20181099	20190599	258	42.754553	43.1947	3157	2696	BW
RU	DJANKUAT	726	20181099	20190599	257	42.751307	43.196	3103	3736	BW
RU	DJANKUAT	726	20181099	20190599	256	42.752308	43.1958	3108	1786	BW
RU	DJANKUAT	726	20181099	20190599	288	42.767346	43.1934	3346	3309	BW
RU	DJANKUAT	726	20181099	20190599	279	42.772782	43.1893	3578	2805	BW
RU	DJANKUAT	726	20181099	20190599	264	42.758479	43.1909	3269	3174	BW
RU	DJANKUAT	726	20181099	20190599	303	42.76493	43.1953	3288	2044	BW
RU	DJANKUAT	726	20181099	20190599	28	42.756578	43.1992	2952	979	BW
RU	DJANKUAT	726	20181099	20190599	280	42.770901	43.1899	3507	3775	BW
RU	DJANKUAT	726	20181099	20190599	30	42.754164	43.1981	2955	1617	BW
RU	DJANKUAT	726	20181099	20190599	3	42.750194	43.2027	2780	2285	BW
RU	DJANKUAT	726	20181099	20190599	278	42.773018	43.1905	3526	8810	BW
RU	DJANKUAT	726	20181099	20190599	299	42.764709	43.1932	3313	1290	BW
RU	DJANKUAT	726	20181099	20190599	300	42.764725	43.1938	3302	1046	BW
RU	DJANKUAT	726	20181099	20190599	277	42.771433	43.1917	3460	7061	BW
RU	DJANKUAT	726	20181099	20190599	281	42.769559	43.1905	3451	2688	BW
RU	DJANKUAT	726	20181099	20190599	282	42.771164	43.1926	3443	2699	BW
RU	DJANKUAT	726	20181099	20190599	276	42.768972	43.1908	3443	3522	BW
RU	DJANKUAT	726	20181099	20190599	269	42.751695	43.1929	3249	3171	BW
RU	DJANKUAT	726	20181099	20190599	302	42.764608	43.1942	3292	1077	BW
RU	DJANKUAT	726	20181099	20190599	27	42.757661	43.2	2949	1907	BW
RU	DJANKUAT	726	20181099	20190599	283	42.770597	43.1932	3429	1577	BW
RU	DJANKUAT	726	20181099	20190599	275	42.766199	43.1913	3385	4072	BW
RU	DJANKUAT	726	20181099	20190599	298	42.76475	43.1927	3323	3364	BW
RU	DJANKUAT	726	20181099	20190599	304	42.765279	43.1947	3293	1589	BW
RU	DJANKUAT	726	20181099	20190599	274	42.764051	43.1911	3336	3439	BW
RU	DJANKUAT	726	20181099	20190599	273	42.76109	43.1907	3287	4674	BW
RU	DJANKUAT	726	20181099	20190599	284	42.76863	43.1928	3406	1499	BW
RU	DJANKUAT	726	20181099	20190599	285	42.766289	43.192	3361	2109	BW
RU	DJANKUAT	726	20181099	20190599	272	42.760573	43.191	3274	3376	BW
RU	DJANKUAT	726	20181099	20190599	271	42.75462	43.1924	3223	3240	BW
RU	DJANKUAT	726	20181099	20190599	254	42.75316	43.1955	3119	2176	BW
RU	DJANKUAT	726	20181099	20190599	301	42.765292	43.1943	3296	1595	BW
RU	DJANKUAT	726	20181099	20190599	229	42.76006	43.1998	3009	2471	BW
RU	DJANKUAT	726	20181099	20190599	238	42.752802	43.1939	3188	2391	BW
RU	DJANKUAT	726	20181099	20190599	236	42.753385	43.1935	3197	2911	BW
RU	DJANKUAT	726	20181099	20190599	255	42.752034	43.1955	3121	2339	BW
RU	DJANKUAT	726	20181099	20190599	234	42.757942	43.1939	3190	1936	BW
RU	DJANKUAT	726	20181099	20190599	293	42.768827	43.1938	3381	2054	BW
RU	DJANKUAT	726	20181099	20190599	294	42.769563	43.194	3437	2313	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20181099	20190599	233	42.756618	43.1936	3191	2885	BW
RU	DJANKUAT	726	20181099	20190599	295	42.769873	43.1934	3410	1653	BW
RU	DJANKUAT	726	20181099	20190599	232	42.757586	43.2011	2973	1690	BW
RU	DJANKUAT	726	20181099	20190599	231	42.758699	43.2004	2991	1053	BW
RU	DJANKUAT	726	20181099	20190599	239	42.753846	43.194	3182	2651	BW
RU	DJANKUAT	726	20181099	20190599	23	42.755111	43.1983	2956	1849	BW
RU	DJANKUAT	726	20181099	20190599	237	42.752003	43.1939	3194	2684	BW
RU	DJANKUAT	726	20181099	20190599	296	42.767349	43.194	3344	1961	BW
RU	DJANKUAT	726	20181099	20190599	228	42.760974	43.1996	3015	2252	BW
RU	DJANKUAT	726	20181099	20190599	227	42.761028	43.2003	3027	1307	BW
RU	DJANKUAT	726	20181099	20190599	226	42.761645	43.1998	3024	2527	BW
RU	DJANKUAT	726	20181099	20190599	225	42.761227	43.1991	3030	1703	BW
RU	DJANKUAT	726	20181099	20190599	224	42.761979	43.199	3037	3076	BW
RU	DJANKUAT	726	20181099	20190599	223	42.762172	43.2001	3032	1917	BW
RU	DJANKUAT	726	20181099	20190599	222	42.76205	43.1996	3030	1856	BW
RU	DJANKUAT	726	20181099	20190599	221	42.763408	43.2006	3068	2159	BW
RU	DJANKUAT	726	20181099	20190599	297	42.766518	43.1936	3328	4005	BW
RU	DJANKUAT	726	20181099	20190599	230	42.759427	43.2004	2989	1495	BW
RU	DJANKUAT	726	20181099	20190599	290	42.764407	43.1918	3336	1040	BW
RU	DJANKUAT	726	20181099	20190599	253	42.754314	43.1956	3126	1331	BW
RU	DJANKUAT	726	20181099	20190599	252	42.755246	43.1953	3131	2079	BW
RU	DJANKUAT	726	20181099	20190599	251	42.753974	43.1954	3123	2339	BW
RU	DJANKUAT	726	20181099	20190599	250	42.75269	43.1953	3125	2371	BW
RU	DJANKUAT	726	20181099	20190599	25	42.758244	43.1995	2961	1762	BW
RU	DJANKUAT	726	20181099	20190599	249	42.751601	43.1951	3162	3509	BW
RU	DJANKUAT	726	20181099	20190599	248	42.752461	43.1951	3132	2729	BW
RU	DJANKUAT	726	20181099	20190599	309	42.7627	43.1921	3282	1520	BW
RU	DJANKUAT	726	20181099	20190599	31	42.75484	43.1998	2927	1585	BW
RU	DJANKUAT	726	20181099	20190599	247	42.753151	43.1948	3148	2553	BW
RU	DJANKUAT	726	20181099	20190599	246	42.752024	43.1944	3171	3444	BW
RU	DJANKUAT	726	20181099	20190599	235	42.754967	43.1932	3191	3074	BW
RU	DJANKUAT	726	20181099	20190599	29	42.755571	43.1988	2954	2197	BW
RU	DJANKUAT	726	20181099	20190599	242	42.755836	43.194	3175	3334	BW
RU	DJANKUAT	726	20181099	20190599	292	42.768193	43.1941	3369	1595	BW
RU	DJANKUAT	726	20181099	20190599	291	42.763671	43.1916	3318	3480	BW
RU	DJANKUAT	726	20181099	20190599	245	42.75375	43.1945	3167	1266	BW
RU	DJANKUAT	726	20181099	20190599	241	42.756757	43.1941	3179	1969	BW
RU	DJANKUAT	726	20181099	20190599	24	42.756808	43.1987	2966	1136	BW
RU	DJANKUAT	726	20181099	20190599	243	42.754378	43.1941	3174	1981	BW
RU	DJANKUAT	726	20181099	20190599	244	42.752686	43.1942	3174	2436	BW
RU	DJANKUAT	726	20181099	20190599	240	42.755227	43.1938	3178	3529	BW
RU	DJANKUAT	726	20190599	20190923	538	42.757249	43.2001	2944	-5850	BS
RU	DJANKUAT	726	20190599	20190923	538	42.757249	43.2001	2944	-4470	BA
RU	DJANKUAT	726	20190599	20190923	66	42.751943	43.2033	2793	-5628	BS
RU	DJANKUAT	726	20190599	20190923	66	42.751943	43.2033	2793	-4493	BA
RU	DJANKUAT	726	20190599	20190923	63	42.753287	43.2023	2849	-4164	BA
RU	DJANKUAT	726	20190599	20190923	5	42.751229	43.2023	2806	-3459	BA
RU	DJANKUAT	726	20190599	20190923	63	42.753287	43.2023	2849	-5799	BS
RU	DJANKUAT	726	20190599	20190923	7	42.751817	43.2011	2864	-6006	BS
RU	DJANKUAT	726	20190599	20190923	100	42.760022	43.1984	3011	-5423	BS
RU	DJANKUAT	726	20190599	20190923	22	42.754249	43.1986	2940	-5315	BS
RU	DJANKUAT	726	20190599	20190923	22	42.754249	43.1986	2940	-3802	BA
RU	DJANKUAT	726	20190599	20190923	228	42.760979	43.1996	3015	-2857	BA
RU	DJANKUAT	726	20190599	20190923	228	42.760979	43.1996	3015	-5109	BS
RU	DJANKUAT	726	20190599	20190923	232	42.757586	43.2011	2973	-3403	BA
RU	DJANKUAT	726	20190599	20190923	232	42.757586	43.2011	2973	-5093	BS
RU	DJANKUAT	726	20190599	20190923	1	42.749408	43.2031	2749	-4608	BA
RU	DJANKUAT	726	20190599	20190923	1	42.749408	43.2031	2749	-5766	BS
RU	DJANKUAT	726	20190599	20190923	24	42.756808	43.1987	2966	-4141	BA
RU	DJANKUAT	726	20190599	20190923	195	42.763929	43.1996	3084	-5227	BS
RU	DJANKUAT	726	20190599	20190923	195	42.763929	43.1996	3084	-2006	BA
RU	DJANKUAT	726	20190599	20190923	24	42.756808	43.1987	2966	-5277	BS
RU	DJANKUAT	726	20190599	20190923	19	42.753716	43.2004	2900	-5738	BS
RU	DJANKUAT	726	20190599	20190923	100	42.760022	43.1984	3011	-3710	BA
RU	DJANKUAT	726	20190599	20190923	5	42.751229	43.2023	2806	-5547	BS
RU	DJANKUAT	726	20190599	20190923	14	42.749955	43.2035	2751	-5292	BS
RU	DJANKUAT	726	20190599	20190923	7	42.751817	43.2011	2864	-4369	BA
RU	DJANKUAT	726	20190599	20190923	51	42.754243	43.2012	2893	-4204	BA
RU	DJANKUAT	726	20190599	20190923	51	42.754243	43.2012	2893	-5637	BS
RU	DJANKUAT	726	20190599	20190923	14	42.749955	43.2035	2751	-2351	BA
RU	DJANKUAT	726	20190599	20190923	19	42.753716	43.2004	2900	-4803	BA
RU	DJANKUAT	726	20190599	20190923	11	42.751077	43.2031	2782	-3050	BA
RU	DJANKUAT	726	20190599	20190923	11	42.751077	43.2031	2782	-5445	BS
RU	DJANKUAT	726	20190599	20190920	105	42.760294	43.1962	3106	-4917	BS
RU	DJANKUAT	726	20190599	20190920	115	42.75941	43.1923	3223	-4055	BS
RU	DJANKUAT	726	20190599	20190920	110	42.761444	43.1945	3185	-2329	BS
RU	DJANKUAT	726	20190599	20190920	110	42.761444	43.1945	3185	-286	BA
RU	DJANKUAT	726	20190599	20190920	107	42.758788	43.1954	3125	-1914	BA
RU	DJANKUAT	726	20190599	20190920	105	42.760294	43.1962	3106	-3338	BA
RU	DJANKUAT	726	20190599	20190920	115	42.75941	43.1923	3223	-858	BA
RU	DJANKUAT	726	20190599	20190920	103	42.760707	43.1974	3069	-4574	BS
RU	DJANKUAT	726	20190599	20190920	107	42.758788	43.1954	3125	-5012	BS
RU	DJANKUAT	726	20190599	20190920	164	42.757033	43.197	3021	-4346	BS
RU	DJANKUAT	726	20190599	20190920	103	42.760707	43.1974	3069	-2515	BA
RU	DJANKUAT	726	20190599	20190920	172	42.757842	43.1981	2990	-4583	BS
RU	DJANKUAT	726	20190599	20190920	172	42.757842	43.1981	2990	-1415	BA
RU	DJANKUAT	726	20190599	20190920	164	42.757033	43.197	3021	-2997	BA
RU	DJANKUAT	726	20190599	20190920	148	42.757624	43.1959	3084	-5539	BS
RU	DJANKUAT	726	20190599	20190920	148	42.757624	43.1959	3084	-3280	BA
RU	DJANKUAT	726	20190599	20190918	233	42.756618	43.1936	3191	-1664	BA
RU	DJANKUAT	726	20190599	20190918	247	42.753151	43.1948	3148	-2475	BA
RU	DJANKUAT	726	20190599	20190918	247	42.753151	43.1948	3148	-5028	BS
RU	DJANKUAT	726	20190599	20190918	233	42.756618	43.1936	3191	-4549	BS
RU	DJANKUAT	726	20190599	20190918	264	42.758479	43.1909	3269	-4691	BS
RU	DJANKUAT	726	20190599	20190918	274	42.764051	43.1911	3336	-434	BA
RU	DJANKUAT	726	20190599	20190918	274	42.764051	43.1911	3336	-3873	BS

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	DJANKUAT	726	20190599	20190918	264	42.758479	43.1909	3269	-1517	BA
RU	DJANKUAT	726	20190599	20190829	283	42.770597	43.1931	3429	-1983	BA
RU	DJANKUAT	726	20190599	20190829	297	42.766518	43.1936	3328	1555	BA
RU	DJANKUAT	726	20190599	20190829	283	42.770597	43.1931	3429	-3560	BS
RU	DJANKUAT	726	20190599	20190829	297	42.766518	43.1936	3328	-2450	BS
RU	DJANKUAT	726	20190599	20190829	276	42.768972	43.1908	3443	789	BA
RU	DJANKUAT	726	20190599	20190829	280	42.770901	43.1899	3507	-2566	BS
RU	DJANKUAT	726	20190599	20190829	280	42.770901	43.1899	3507	3775	BA
RU	DJANKUAT	726	20190599	20190829	278	42.773018	43.1905	3526	-1961	BS
RU	DJANKUAT	726	20190599	20190829	278	42.773018	43.1905	3526	6849	BA
RU	DJANKUAT	726	20190599	20190829	304	42.76493	43.1953	3293	-581	BA
RU	DJANKUAT	726	20190599	20190829	275	42.766199	43.1913	3385	-2753	BS
RU	DJANKUAT	726	20190599	20190829	277	42.771433	43.1918	3460	4397	BA
RU	DJANKUAT	726	20190599	20190829	275	42.766199	43.1913	3385	1319	BA
RU	DJANKUAT	726	20190599	20190829	273	42.76109	43.1907	3287	-2848	BS
RU	DJANKUAT	726	20190599	20190829	273	42.76109	43.1907	3287	1826	BA
RU	DJANKUAT	726	20190599	20190829	304	42.76493	43.1953	3293	-2625	BS
RU	DJANKUAT	726	20190599	20190829	277	42.771433	43.1918	3460	-2664	BS
RU	DJANKUAT	726	20190599	20190829	276	42.768972	43.1908	3443	-2733	BS
RU	LEVIY AKTRU	794	20180999	20190511	293	50.0749	87.729	2740	418	BW
RU	LEVIY AKTRU	794	20180999	20190511	294	50.0752	87.728	2758	190	BW
RU	LEVIY AKTRU	794	20180999	20190511	289	50.0743	87.7311	2688	608	BW
RU	LEVIY AKTRU	794	20180999	20190511	292	50.0747	87.7296	2728	760	BW
RU	LEVIY AKTRU	794	20180999	20190511	291	50.0745	87.7302	2716	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	290	50.0744	87.7306	2702	562	BW
RU	LEVIY AKTRU	794	20180999	20190511	29	50.0767	87.7169	2867	646	BW
RU	LEVIY AKTRU	794	20180999	20190511	280	50.0741	87.7316	2679	635	BW
RU	LEVIY AKTRU	794	20180999	20190511	288	50.0743	87.7315	2684	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	287	50.0742	87.732	2661	418	BW
RU	LEVIY AKTRU	794	20180999	20190511	282	50.0737	87.7308	2686	684	BW
RU	LEVIY AKTRU	794	20180999	20190511	285	50.0743	87.7321	2627	372	BW
RU	LEVIY AKTRU	794	20180999	20190511	309	50.0756	87.7248	2789	410	BW
RU	LEVIY AKTRU	794	20180999	20190511	284	50.0741	87.7321	2656	426	BW
RU	LEVIY AKTRU	794	20180999	20190511	283	50.0738	87.7315	2656	654	BW
RU	LEVIY AKTRU	794	20180999	20190511	281	50.074	87.7312	2677	570	BW
RU	LEVIY AKTRU	794	20180999	20190511	295	50.0756	87.7273	2765	285	BW
RU	LEVIY AKTRU	794	20180999	20190511	286	50.074	87.7325	2652	372	BW
RU	LEVIY AKTRU	794	20180999	20190511	303	50.0746	87.7264	2767	494	BW
RU	LEVIY AKTRU	794	20180999	20190511	312	50.0776	87.7246	2787	513	BW
RU	LEVIY AKTRU	794	20180999	20190511	311	50.0769	87.7252	2805	152	BW
RU	LEVIY AKTRU	794	20180999	20190511	310	50.0765	87.7251	2785	684	BW
RU	LEVIY AKTRU	794	20180999	20190511	31	50.0755	87.7166	2842	893	BW
RU	LEVIY AKTRU	794	20180999	20190511	266	50.0747	87.7282	2748	627	BW
RU	LEVIY AKTRU	794	20180999	20190511	308	50.0748	87.7247	2789	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	306	50.0736	87.7247	2796	798	BW
RU	LEVIY AKTRU	794	20180999	20190511	307	50.0742	87.7248	2790	684	BW
RU	LEVIY AKTRU	794	20180999	20190511	304	50.074	87.7262	2793	589	BW
RU	LEVIY AKTRU	794	20180999	20190511	296	50.0764	87.7272	2755	285	BW
RU	LEVIY AKTRU	794	20180999	20190511	302	50.0751	87.7263	2776	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	301	50.0755	87.7261	2775	209	BW
RU	LEVIY AKTRU	794	20180999	20190511	300	50.0759	87.7263	2778	627	BW
RU	LEVIY AKTRU	794	20180999	20190511	30	50.076	87.7169	2859	676	BW
RU	LEVIY AKTRU	794	20180999	20190511	299	50.0763	87.7265	2776	684	BW
RU	LEVIY AKTRU	794	20180999	20190511	298	50.0766	87.7267	2779	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	297	50.077	87.7268	2740	570	BW
RU	LEVIY AKTRU	794	20180999	20190511	305	50.0736	87.7257	2776	646	BW
RU	LEVIY AKTRU	794	20180999	20190511	251	50.0857	87.6939	3274	980	BW
RU	LEVIY AKTRU	794	20180999	20190511	26	50.0781	87.718	2860	342	BW
RU	LEVIY AKTRU	794	20180999	20190511	259	50.075	87.7285	2753	209	BW
RU	LEVIY AKTRU	794	20180999	20190511	258	50.0831	87.7028	3166	640	BW
RU	LEVIY AKTRU	794	20180999	20190511	257	50.0859	87.6889	3345	208	BW
RU	LEVIY AKTRU	794	20180999	20190511	256	50.0864	87.6893	3339	160	BW
RU	LEVIY AKTRU	794	20180999	20190511	255	50.0868	87.6904	3330	180	BW
RU	LEVIY AKTRU	794	20180999	20190511	254	50.0871	87.6913	3316	260	BW
RU	LEVIY AKTRU	794	20180999	20190511	268	50.0744	87.7278	2750	817	BW
RU	LEVIY AKTRU	794	20180999	20190511	252	50.0865	87.6934	3291	500	BW
RU	LEVIY AKTRU	794	20180999	20190511	262	50.0758	87.7285	2753	418	BW
RU	LEVIY AKTRU	794	20180999	20190511	250	50.085	87.6944	3256	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	25	50.0787	87.7184	2854	543	BW
RU	LEVIY AKTRU	794	20180999	20190511	249	50.0844	87.6948	3252	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	248	50.085	87.695	3245	400	BW
RU	LEVIY AKTRU	794	20180999	20190511	247	50.0853	87.6956	3240	400	BW
RU	LEVIY AKTRU	794	20180999	20190511	246	50.0848	87.6961	3231	1320	BW
RU	LEVIY AKTRU	794	20180999	20190511	245	50.0842	87.6964	3223	1060	BW
RU	LEVIY AKTRU	794	20180999	20190511	244	50.0832	87.6975	3220	560	BW
RU	LEVIY AKTRU	794	20180999	20190511	253	50.0872	87.6924	3305	360	BW
RU	LEVIY AKTRU	794	20180999	20190511	27	50.0778	87.7177	2882	380	BW
RU	LEVIY AKTRU	794	20180999	20190511	279	50.0743	87.7317	2678	236	BW
RU	LEVIY AKTRU	794	20180999	20190511	278	50.0746	87.7315	2683	201	BW
RU	LEVIY AKTRU	794	20180999	20190511	277	50.0751	87.7313	2684	342	BW
RU	LEVIY AKTRU	794	20180999	20190511	276	50.0753	87.7312	2686	418	BW
RU	LEVIY AKTRU	794	20180999	20190511	275	50.0752	87.7308	2697	380	BW
RU	LEVIY AKTRU	794	20180999	20190511	274	50.0755	87.7305	2702	266	BW
RU	LEVIY AKTRU	794	20180999	20190511	273	50.0759	87.7303	2712	137	BW
RU	LEVIY AKTRU	794	20180999	20190511	272	50.0757	87.7296	2718	213	BW
RU	LEVIY AKTRU	794	20180999	20190511	260	50.0753	87.7286	2747	171	BW
RU	LEVIY AKTRU	794	20180999	20190511	270	50.0739	87.7276	2756	380	BW
RU	LEVIY AKTRU	794	20180999	20190511	261	50.0756	87.7286	2749	608	BW
RU	LEVIY AKTRU	794	20180999	20190511	269	50.0742	87.7277	2750	190	BW
RU	LEVIY AKTRU	794	20180999	20190511	313	50.077	87.7243	2803	676	BW
RU	LEVIY AKTRU	794	20180999	20190511	267	50.0746	87.728	2746	608	BW
RU	LEVIY AKTRU	794	20180999	20190511	36	50.078	87.7161	2880	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	265	50.0749	87.7284	2756	665	BW
RU	LEVIY AKTRU	794	20180999	20190511	264	50.0763	87.7284	2744	171	BW
RU	LEVIY AKTRU	794	20180999	20190511	263	50.076	87.7285	2749	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	28	50.0772	87.7173	2867	456	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	LEVIY AKTRU	794	20180999	20190511	271	50.0737	87.7274	2746	684	BW
RU	LEVIY AKTRU	794	20180999	20190511	72	50.0771	87.7076	2930	703	BW
RU	LEVIY AKTRU	794	20180999	20190511	34	50.0761	87.7151	2885	388	BW
RU	LEVIY AKTRU	794	20180999	20190511	80	50.0789	87.7046	3003	612	BW
RU	LEVIY AKTRU	794	20180999	20190511	79	50.0783	87.7044	2982	703	BW
RU	LEVIY AKTRU	794	20180999	20190511	78	50.0778	87.704	2999	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	77	50.0774	87.704	2988	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	76	50.077	87.7043	2969	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	75	50.077	87.7049	2971	627	BW
RU	LEVIY AKTRU	794	20180999	20190511	82	50.0793	87.7055	2941	863	BW
RU	LEVIY AKTRU	794	20180999	20190511	73	50.0771	87.7066	2929	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	83	50.0787	87.7055	2960	608	BW
RU	LEVIY AKTRU	794	20180999	20190511	71	50.0771	87.7081	2904	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	70	50.077	87.7089	2914	817	BW
RU	LEVIY AKTRU	794	20180999	20190511	69	50.0769	87.7098	2924	942	BW
RU	LEVIY AKTRU	794	20180999	20190511	68	50.0769	87.7107	2935	874	BW
RU	LEVIY AKTRU	794	20180999	20190511	67	50.0768	87.7116	2910	931	BW
RU	LEVIY AKTRU	794	20180999	20190511	66	50.0766	87.713	2915	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	65	50.0812	87.713	2969	342	BW
RU	LEVIY AKTRU	794	20180999	20190511	64	50.0811	87.714	2944	281	BW
RU	LEVIY AKTRU	794	20180999	20190511	74	50.0771	87.7057	2943	855	BW
RU	LEVIY AKTRU	794	20180999	20190511	92	50.0783	87.7072	2962	703	BW
RU	LEVIY AKTRU	794	20180999	20190511	99	50.0798	87.7101	2923	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	203	50.0819	87.6872	3377	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	243	50.0827	87.6981	3226	760	BW
RU	LEVIY AKTRU	794	20180999	20190511	98	50.0798	87.7095	2921	555	BW
RU	LEVIY AKTRU	794	20180999	20190511	97	50.0794	87.7084	2919	836	BW
RU	LEVIY AKTRU	794	20180999	20190511	96	50.0788	87.7087	2917	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	95	50.0782	87.709	2916	646	BW
RU	LEVIY AKTRU	794	20180999	20190511	81	50.0795	87.7045	3054	840	BW
RU	LEVIY AKTRU	794	20180999	20190511	93	50.0777	87.7073	2957	429	BW
RU	LEVIY AKTRU	794	20180999	20190511	61	50.0794	87.7133	2919	521	BW
RU	LEVIY AKTRU	794	20180999	20190511	91	50.0788	87.7071	2950	692	BW
RU	LEVIY AKTRU	794	20180999	20190511	90	50.0794	87.7073	2942	711	BW
RU	LEVIY AKTRU	794	20180999	20190511	89	50.0793	87.7065	2949	912	BW
RU	LEVIY AKTRU	794	20180999	20190511	88	50.0788	87.7064	2951	703	BW
RU	LEVIY AKTRU	794	20180999	20190511	87	50.0782	87.7063	2968	524	BW
RU	LEVIY AKTRU	794	20180999	20190511	86	50.0776	87.7063	2966	578	BW
RU	LEVIY AKTRU	794	20180999	20190511	85	50.0778	87.7054	2961	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	84	50.0781	87.7053	2959	760	BW
RU	LEVIY AKTRU	794	20180999	20190511	94	50.0776	87.7086	2934	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	322	50.0739	87.7218	2813	779	BW
RU	LEVIY AKTRU	794	20180999	20190511	40	50.0798	87.7158	2884	209	BW
RU	LEVIY AKTRU	794	20180999	20190511	39	50.0799	87.7161	2889	152	BW
RU	LEVIY AKTRU	794	20180999	20190511	38	50.0794	87.7168	2878	331	BW
RU	LEVIY AKTRU	794	20180999	20190511	37	50.0787	87.7166	2874	228	BW
RU	LEVIY AKTRU	794	20180999	20190511	35	50.0772	87.7156	2875	266	BW
RU	LEVIY AKTRU	794	20180999	20190511	33	50.0754	87.7146	2893	627	BW
RU	LEVIY AKTRU	794	20180999	20190511	325	50.0759	87.7222	2820	513	BW
RU	LEVIY AKTRU	794	20180999	20190511	63	50.0806	87.714	2937	787	BW
RU	LEVIY AKTRU	794	20180999	20190511	323	50.0746	87.722	2821	779	BW
RU	LEVIY AKTRU	794	20180999	20190511	43	50.0784	87.7148	2883	502	BW
RU	LEVIY AKTRU	794	20180999	20190511	321	50.0732	87.7216	2815	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	320	50.0732	87.7225	2813	646	BW
RU	LEVIY AKTRU	794	20180999	20190511	32	50.0748	87.7163	2845	942	BW
RU	LEVIY AKTRU	794	20180999	20190511	319	50.0737	87.7228	2808	722	BW
RU	LEVIY AKTRU	794	20180999	20190511	318	50.0744	87.7232	2806	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	317	50.0749	87.7234	2796	494	BW
RU	LEVIY AKTRU	794	20180999	20190511	316	50.0755	87.7235	2804	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	315	50.0759	87.7236	2809	342	BW
RU	LEVIY AKTRU	794	20180999	20190511	324	50.0752	87.722	2815	445	BW
RU	LEVIY AKTRU	794	20180999	20190511	51	50.0747	87.7129	2957	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	314	50.0764	87.7239	2819	448	BW
RU	LEVIY AKTRU	794	20180999	20190511	60	50.0788	87.7131	2913	513	BW
RU	LEVIY AKTRU	794	20180999	20190511	59	50.0783	87.7129	2903	289	BW
RU	LEVIY AKTRU	794	20180999	20190511	58	50.0778	87.7126	2897	707	BW
RU	LEVIY AKTRU	794	20180999	20190511	57	50.077	87.7122	2904	855	BW
RU	LEVIY AKTRU	794	20180999	20190511	56	50.0763	87.7118	2912	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	55	50.0755	87.7114	2928	931	BW
RU	LEVIY AKTRU	794	20180999	20190511	54	50.0752	87.7111	2941	646	BW
RU	LEVIY AKTRU	794	20180999	20190511	41	50.0794	87.7155	2892	741	BW
RU	LEVIY AKTRU	794	20180999	20190511	52	50.0747	87.712	2951	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	42	50.0789	87.7151	2883	627	BW
RU	LEVIY AKTRU	794	20180999	20190511	50	50.0751	87.7129	2926	380	BW
RU	LEVIY AKTRU	794	20180999	20190511	49	50.0756	87.7129	2912	669	BW
RU	LEVIY AKTRU	794	20180999	20190511	48	50.0761	87.7132	2899	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	47	50.0766	87.7136	2888	160	BW
RU	LEVIY AKTRU	794	20180999	20190511	46	50.077	87.7139	2887	540	BW
RU	LEVIY AKTRU	794	20180999	20190511	45	50.0775	87.7142	2890	319	BW
RU	LEVIY AKTRU	794	20180999	20190511	44	50.078	87.7145	2896	342	BW
RU	LEVIY AKTRU	794	20180999	20190511	62	50.0801	87.7138	2930	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	53	50.0749	87.7116	2954	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	145	50.0818	87.7006	3199	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	171	50.0806	87.694	3284	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	152	50.085	87.6996	3193	700	BW
RU	LEVIY AKTRU	794	20180999	20190511	151	50.0847	87.6999	3184	640	BW
RU	LEVIY AKTRU	794	20180999	20190511	150	50.0841	87.7006	3195	700	BW
RU	LEVIY AKTRU	794	20180999	20190511	15	50.0745	87.7202	2814	600	BW
RU	LEVIY AKTRU	794	20180999	20190511	149	50.0837	87.7009	3186	880	BW
RU	LEVIY AKTRU	794	20180999	20190511	148	50.0832	87.7012	3181	912	BW
RU	LEVIY AKTRU	794	20180999	20190511	154	50.0861	87.6986	3188	868	BW
RU	LEVIY AKTRU	794	20180999	20190511	146	50.0822	87.7006	3187	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	155	50.0864	87.6982	3203	920	BW
RU	LEVIY AKTRU	794	20180999	20190511	144	50.082	87.7011	3181	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	143	50.0823	87.7019	3169	792	BW
RU	LEVIY AKTRU	794	20180999	20190511	142	50.0826	87.7025	3165	700	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	LEVIY AKTRU	794	20180999	20190511	141	50.0827	87.703	3159	568	BW
RU	LEVIY AKTRU	794	20180999	20190511	140	50.0827	87.7035	3149	200	BW
RU	LEVIY AKTRU	794	20180999	20190511	14	50.0755	87.7203	2829	543	BW
RU	LEVIY AKTRU	794	20180999	20190511	139	50.0825	87.7046	3125	920	BW
RU	LEVIY AKTRU	794	20180999	20190511	147	50.0825	87.7007	3179	980	BW
RU	LEVIY AKTRU	794	20180999	20190511	162	50.0836	87.6967	3234	932	BW
RU	LEVIY AKTRU	794	20180999	20190511	170	50.0811	87.6943	3280	904	BW
RU	LEVIY AKTRU	794	20180999	20190511	17	50.0733	87.7195	2799	391	BW
RU	LEVIY AKTRU	794	20180999	20190511	169	50.0814	87.6947	3273	700	BW
RU	LEVIY AKTRU	794	20180999	20190511	168	50.0818	87.6949	3269	280	BW
RU	LEVIY AKTRU	794	20180999	20190511	167	50.0822	87.6952	3260	384	BW
RU	LEVIY AKTRU	794	20180999	20190511	166	50.0826	87.6955	3254	688	BW
RU	LEVIY AKTRU	794	20180999	20190511	165	50.0829	87.6958	3254	700	BW
RU	LEVIY AKTRU	794	20180999	20190511	153	50.0856	87.6991	3190	800	BW
RU	LEVIY AKTRU	794	20180999	20190511	163	50.0833	87.6965	3240	792	BW
RU	LEVIY AKTRU	794	20180999	20190511	136	50.0823	87.7058	3100	904	BW
RU	LEVIY AKTRU	794	20180999	20190511	161	50.084	87.6969	3223	996	BW
RU	LEVIY AKTRU	794	20180999	20190511	160	50.0845	87.697	3213	916	BW
RU	LEVIY AKTRU	794	20180999	20190511	16	50.0735	87.7199	2810	528	BW
RU	LEVIY AKTRU	794	20180999	20190511	159	50.085	87.6973	3217	996	BW
RU	LEVIY AKTRU	794	20180999	20190511	158	50.0854	87.6976	3210	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	157	50.0858	87.6979	3212	992	BW
RU	LEVIY AKTRU	794	20180999	20190511	156	50.0861	87.6981	3208	864	BW
RU	LEVIY AKTRU	794	20180999	20190511	164	50.0831	87.6961	3245	780	BW
RU	LEVIY AKTRU	794	20180999	20190511	105	50.0782	87.711	2924	597	BW
RU	LEVIY AKTRU	794	20180999	20190511	114	50.0817	87.7106	3003	216	BW
RU	LEVIY AKTRU	794	20180999	20190511	113	50.0816	87.7116	2987	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	112	50.0817	87.7122	2972	437	BW
RU	LEVIY AKTRU	794	20180999	20190511	111	50.0815	87.7124	2983	456	BW
RU	LEVIY AKTRU	794	20180999	20190511	110	50.0808	87.7127	2954	414	BW
RU	LEVIY AKTRU	794	20180999	20190511	109	50.0801	87.7122	2932	163	BW
RU	LEVIY AKTRU	794	20180999	20190511	108	50.0796	87.7119	2929	353	BW
RU	LEVIY AKTRU	794	20180999	20190511	138	50.0823	87.7051	3115	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	106	50.0787	87.7113	2928	285	BW
RU	LEVIY AKTRU	794	20180999	20190511	117	50.0825	87.7093	3034	432	BW
RU	LEVIY AKTRU	794	20180999	20190511	104	50.0776	87.7107	2915	855	BW
RU	LEVIY AKTRU	794	20180999	20190511	103	50.0776	87.7097	2920	608	BW
RU	LEVIY AKTRU	794	20180999	20190511	102	50.0782	87.7096	2923	627	BW
RU	LEVIY AKTRU	794	20180999	20190511	101	50.079	87.7097	2930	623	BW
RU	LEVIY AKTRU	794	20180999	20190511	100	50.0794	87.7098	2901	285	BW
RU	LEVIY AKTRU	794	20180999	20190511	205	50.0815	87.687	3377	1160	BW
RU	LEVIY AKTRU	794	20180999	20190511	242	50.0824	87.6972	3247	720	BW
RU	LEVIY AKTRU	794	20180999	20190511	107	50.0789	87.7116	2924	315	BW
RU	LEVIY AKTRU	794	20180999	20190511	126	50.0819	87.7082	3055	660	BW
RU	LEVIY AKTRU	794	20180999	20190511	127	50.0817	87.7082	3054	540	BW
RU	LEVIY AKTRU	794	20180999	20190511	135	50.0827	87.7062	3090	972	BW
RU	LEVIY AKTRU	794	20180999	20190511	134	50.0829	87.7063	3090	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	133	50.0832	87.7065	3079	912	BW
RU	LEVIY AKTRU	794	20180999	20190511	132	50.0834	87.7067	3080	848	BW
RU	LEVIY AKTRU	794	20180999	20190511	131	50.083	87.7069	3065	764	BW
RU	LEVIY AKTRU	794	20180999	20190511	130	50.0826	87.7072	3055	740	BW
RU	LEVIY AKTRU	794	20180999	20190511	115	50.0817	87.7096	3025	460	BW
RU	LEVIY AKTRU	794	20180999	20190511	128	50.0818	87.7075	3060	680	BW
RU	LEVIY AKTRU	794	20180999	20190511	116	50.0821	87.7093	3029	528	BW
RU	LEVIY AKTRU	794	20180999	20190511	124	50.0827	87.708	3050	660	BW
RU	LEVIY AKTRU	794	20180999	20190511	123	50.0832	87.7079	3042	720	BW
RU	LEVIY AKTRU	794	20180999	20190511	122	50.0835	87.708	3056	360	BW
RU	LEVIY AKTRU	794	20180999	20190511	121	50.0835	87.7085	3053	220	BW
RU	LEVIY AKTRU	794	20180999	20190511	120	50.0832	87.7091	3044	320	BW
RU	LEVIY AKTRU	794	20180999	20190511	119	50.0827	87.709	3044	460	BW
RU	LEVIY AKTRU	794	20180999	20190511	118	50.0828	87.7093	3042	220	BW
RU	LEVIY AKTRU	794	20180999	20190511	137	50.0821	87.7055	3102	976	BW
RU	LEVIY AKTRU	794	20180999	20190511	129	50.0822	87.7074	3068	692	BW
RU	LEVIY AKTRU	794	20180999	20190511	215	50.0844	87.6813	3496	208	BW
RU	LEVIY AKTRU	794	20180999	20190511	207	50.0818	87.686	3384	1280	BW
RU	LEVIY AKTRU	794	20180999	20190511	222	50.0859	87.7015	3179	680	BW
RU	LEVIY AKTRU	794	20180999	20190511	221	50.0854	87.7019	3180	400	BW
RU	LEVIY AKTRU	794	20180999	20190511	220	50.0847	87.7025	3171	720	BW
RU	LEVIY AKTRU	794	20180999	20190511	22	50.0769	87.7193	2845	418	BW
RU	LEVIY AKTRU	794	20180999	20190511	219	50.0858	87.6765	3585	20	BW
RU	LEVIY AKTRU	794	20180999	20190511	218	50.0852	87.679	3539	20	BW
RU	LEVIY AKTRU	794	20180999	20190511	224	50.0857	87.7006	3185	640	BW
RU	LEVIY AKTRU	794	20180999	20190511	216	50.0847	87.6806	3513	160	BW
RU	LEVIY AKTRU	794	20180999	20190511	225	50.085	87.7002	3187	660	BW
RU	LEVIY AKTRU	794	20180999	20190511	214	50.084	87.6819	3479	192	BW
RU	LEVIY AKTRU	794	20180999	20190511	213	50.0836	87.6826	3421	340	BW
RU	LEVIY AKTRU	794	20180999	20190511	212	50.0833	87.6832	3446	440	BW
RU	LEVIY AKTRU	794	20180999	20190511	211	50.0829	87.6838	3436	800	BW
RU	LEVIY AKTRU	794	20180999	20190511	210	50.0826	87.6843	3430	800	BW
RU	LEVIY AKTRU	794	20180999	20190511	21	50.0758	87.719	2840	418	BW
RU	LEVIY AKTRU	794	20180999	20190511	209	50.0823	87.6849	3420	920	BW
RU	LEVIY AKTRU	794	20180999	20190511	208	50.0821	87.6854	3407	1108	BW
RU	LEVIY AKTRU	794	20180999	20190511	217	50.0849	87.6798	3521	20	BW
RU	LEVIY AKTRU	794	20180999	20190511	233	50.0762	87.7205	2830	274	BW
RU	LEVIY AKTRU	794	20180999	20190511	241	50.0819	87.697	3251	480	BW
RU	LEVIY AKTRU	794	20180999	20190511	240	50.0813	87.6969	3256	800	BW
RU	LEVIY AKTRU	794	20180999	20190511	125	50.0824	87.7081	3047	860	BW
RU	LEVIY AKTRU	794	20180999	20190511	172	50.0803	87.6937	3279	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	24	50.0783	87.7197	2839	445	BW
RU	LEVIY AKTRU	794	20180999	20190511	239	50.0811	87.698	3242	1440	BW
RU	LEVIY AKTRU	794	20180999	20190511	237	50.082	87.6989	3224	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	223	50.0864	87.7008	3184	800	BW
RU	LEVIY AKTRU	794	20180999	20190511	234	50.0833	87.6987	3209	540	BW
RU	LEVIY AKTRU	794	20180999	20190511	236	50.0821	87.6981	3232	1180	BW
RU	LEVIY AKTRU	794	20180999	20190511	232	50.0767	87.7207	2829	448	BW
RU	LEVIY AKTRU	794	20180999	20190511	231	50.0773	87.721	2828	851	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
RU	LEVIY AKTRU	794	20180999	20190511	230	50.0781	87.7213	2824	543	BW
RU	LEVIY AKTRU	794	20180999	20190511	23	50.0778	87.7196	2845	209	BW
RU	LEVIY AKTRU	794	20180999	20190511	229	50.0781	87.7224	2792	509	BW
RU	LEVIY AKTRU	794	20180999	20190511	228	50.0774	87.7227	2807	247	BW
RU	LEVIY AKTRU	794	20180999	20190511	227	50.0769	87.7225	2813	399	BW
RU	LEVIY AKTRU	794	20180999	20190511	226	50.0841	87.6995	3195	680	BW
RU	LEVIY AKTRU	794	20180999	20190511	235	50.0828	87.6981	3222	740	BW
RU	LEVIY AKTRU	794	20180999	20190511	180	50.0838	87.6929	3302	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	19	50.0744	87.7186	2851	399	BW
RU	LEVIY AKTRU	794	20180999	20190511	189	50.0852	87.6889	3348	240	BW
RU	LEVIY AKTRU	794	20180999	20190511	188	50.0853	87.6893	3353	220	BW
RU	LEVIY AKTRU	794	20180999	20190511	187	50.0849	87.6897	3351	152	BW
RU	LEVIY AKTRU	794	20180999	20190511	186	50.0845	87.6899	3344	160	BW
RU	LEVIY AKTRU	794	20180999	20190511	185	50.0842	87.6901	3342	200	BW
RU	LEVIY AKTRU	794	20180999	20190511	184	50.084	87.6906	3323	240	BW
RU	LEVIY AKTRU	794	20180999	20190511	183	50.0839	87.6915	3307	360	BW
RU	LEVIY AKTRU	794	20180999	20190511	190	50.0849	87.6888	3357	340	BW
RU	LEVIY AKTRU	794	20180999	20190511	181	50.0836	87.6924	3302	368	BW
RU	LEVIY AKTRU	794	20180999	20190511	179	50.0835	87.6933	3281	340	BW
RU	LEVIY AKTRU	794	20180999	20190511	18	50.0738	87.7186	2844	1140	BW
RU	LEVIY AKTRU	794	20180999	20190511	178	50.083	87.6936	3280	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	177	50.0825	87.6936	3272	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	176	50.0819	87.6941	3271	280	BW
RU	LEVIY AKTRU	794	20180999	20190511	175	50.0812	87.6936	3289	928	BW
RU	LEVIY AKTRU	794	20180999	20190511	206	50.0816	87.6865	3383	1280	BW
RU	LEVIY AKTRU	794	20180999	20190511	238	50.0816	87.6983	3225	1460	BW
RU	LEVIY AKTRU	794	20180999	20190511	174	50.0807	87.6936	3289	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	173	50.08	87.6939	3313	1200	BW
RU	LEVIY AKTRU	794	20180999	20190511	182	50.0838	87.6919	3304	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	204	50.0817	87.6871	3378	1120	BW
RU	LEVIY AKTRU	794	20180999	20190511	199	50.0829	87.6877	3369	1080	BW
RU	LEVIY AKTRU	794	20180999	20190511	198	50.0831	87.6878	3362	1100	BW
RU	LEVIY AKTRU	794	20180999	20190511	197	50.0833	87.6878	3347	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	202	50.0822	87.6873	3365	940	BW
RU	LEVIY AKTRU	794	20180999	20190511	196	50.0838	87.7026	3172	740	BW
RU	LEVIY AKTRU	794	20180999	20190511	200	50.0826	87.6875	3377	960	BW
RU	LEVIY AKTRU	794	20180999	20190511	20	50.0749	87.7188	2833	532	BW
RU	LEVIY AKTRU	794	20180999	20190511	195	50.0836	87.688	3345	680	BW
RU	LEVIY AKTRU	794	20180999	20190511	194	50.0838	87.6881	3344	720	BW
RU	LEVIY AKTRU	794	20180999	20190511	193	50.0842	87.6882	3354	748	BW
RU	LEVIY AKTRU	794	20180999	20190511	192	50.0844	87.6884	3343	672	BW
RU	LEVIY AKTRU	794	20180999	20190511	191	50.0846	87.6887	3354	440	BW
RU	LEVIY AKTRU	794	20180999	20190511	201	50.0824	87.6874	3374	900	BW
RU	LEVIY AKTRU	794	20190511	20190823	2	50.0751	87.7286	2699	-2456	BS
RU	LEVIY AKTRU	794	20190511	20190823	1	50.0741	87.7324	2612	-3648	BS
RU	LEVIY AKTRU	794	20190511	20190823	6	50.0761	87.7165	2810	-2320	BS
RU	LEVIY AKTRU	794	20190511	20190823	5	50.078	87.7204	2785	-2420	BS
RU	LEVIY AKTRU	794	20190511	20190823	4	50.075	87.7228	2756	-2445	BS
RU	LEVIY AKTRU	794	20190511	20190823	7	50.0782	87.7167	2820	-2372	BS
RU	LEVIY AKTRU	794	20190511	20190823	3	50.0769	87.7252	2740	-2615	BS
RU	LEVIY AKTRU	794	20190512	20190824	12	50.0842	87.6966	3179	-770	BS
RU	LEVIY AKTRU	794	20190512	20190824	9	50.0782	87.7089	2891	-2403	BS
RU	LEVIY AKTRU	794	20190512	20190824	10	50.0827	87.709	2992	-2616	BS
RU	LEVIY AKTRU	794	20190512	20190824	11	50.0833	87.7011	3137	-1091	BS
RU	LEVIY AKTRU	794	20190512	20190824	8	50.0801	87.7131	2880	-2709	BS
SE - Sweden										
SE	STORGLACIAEREN	332	20170914	20180913	17N3	68.3825	3.4934	1358	-1953	BA
SE	STORGLACIAEREN	332	20170914	20180913	17N2	68.382	3.4934	1361	-2384	BA
SE	STORGLACIAEREN	332	20170914	20180913	17C	68.3809	3.4934	1370	-2522	BA
SE	STORGLACIAEREN	332	20170914	20180913	16C	68.3809	3.4939	1364	-2632	BA
SE	STORGLACIAEREN	332	20170914	20180913	27C	68.3808	3.488	1493	-614	BA
SE	STORGLACIAEREN	332	20170914	20180913	15S5	68.3783	3.4945	1353	-2137	BA
SE	STORGLACIAEREN	332	20170914	20180913	05C	68.3811	3.4999	1228	-3971	BA
SE	STORGLACIAEREN	332	20170914	20180913	06S2	68.38	3.4993	1249	-4237	BA
SE	STORGLACIAEREN	332	20170914	20180913	06C	68.3811	3.4993	1247	-3705	BA
SE	STORGLACIAEREN	332	20170914	20180913	32N9	68.3856	3.4852	1642	770	BA
SE	STORGLACIAEREN	332	20170914	20180913	04C	68.3811	3.5004	1206	-3796	BA
SE	STORGLACIAEREN	332	20170914	20180913	04N1	68.3816	3.5004	1192	-3595	BA
SE	STORGLACIAEREN	332	20170914	20180913	04S1	68.3806	3.5004	1212	-3622	BA
SE	STORGLACIAEREN	332	20170914	20180913	06S1	68.3805	3.4993	1251	-3897	BA
SE	STORGLACIAEREN	332	20170914	20180913	06N1	68.3816	3.4993	1238	-3585	BA
SE	STORGLACIAEREN	332	20170914	20180913	27N2	68.3819	3.488	1496	-1210	BA
SE	STORGLACIAEREN	332	20170914	20180913	20N2	68.382	3.4918	1389	-3265	BA
SE	STORGLACIAEREN	332	20170914	20180913	20S5	68.3782	3.4918	1386	-1238	BA
SE	STORGLACIAEREN	332	20170914	20180913	22C	68.3809	3.4907	1414	-2292	BA
SE	STORGLACIAEREN	332	20170914	20180913	20S4	68.3788	3.4918	1379	-1862	BA
SE	STORGLACIAEREN	332	20170914	20180913	15C	68.381	3.4945	1357	-2742	BA
SE	STORGLACIAEREN	332	20170914	20180913	06S3	68.3795	3.4994	1243	-3760	BA
SE	STORGLACIAEREN	332	20170914	20180913	20S3	68.3793	3.4918	1381	-2393	BA
SE	STORGLACIAEREN	332	20170914	20180913	20S2	68.3798	3.4918	1386	-2412	BA
SE	STORGLACIAEREN	332	20170914	20180913	24C	68.3808	3.4896	1456	-2366	BA
SE	STORGLACIAEREN	332	20170914	20180913	20S1	68.3804	3.4918	1392	-2375	BA
SE	STORGLACIAEREN	332	20170914	20180913	25S4	68.3787	3.4891	1477	-1550	BA
SE	STORGLACIAEREN	332	20170914	20180913	15S1	68.3804	3.4945	1357	-2714	BA
SE	STORGLACIAEREN	332	20170914	20180913	20C	68.3809	3.4918	1395	-2201	BA
SE	STORGLACIAEREN	332	20170914	20180913	19C	68.3809	3.4923	1385	-2247	BA
SE	STORGLACIAEREN	332	20170914	20180913	18S5	68.3782	3.4929	1369	-1421	BA
SE	STORGLACIAEREN	332	20170914	20180913	18S4	68.3788	3.4929	1369	-2292	BA
SE	STORGLACIAEREN	332	20170914	20180913	25N3	68.3824	3.4891	1507	-2274	BA
SE	STORGLACIAEREN	332	20170914	20180913	18S2	68.3798	3.4929	1376	-2723	BA
SE	STORGLACIAEREN	332	20170914	20180913	18C	68.3809	3.4929	1377	-2366	BA
SE	STORGLACIAEREN	332	20170914	20180913	22S2	68.3798	3.4907	1399	-2320	BA
SE	STORGLACIAEREN	332	20170914	20180913	28N7	68.3845	3.4874	1586	-101	BA
SE	STORGLACIAEREN	332	20170914	20180913	12S3	68.3794	3.4961	1334	-3063	BA
SE	STORGLACIAEREN	332	20170914	20180913	13C	68.381	3.4955	1342	-3815	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
SE	STORGLACIAEREN	332	20170914	20180913	14C	68.381	3.495	1350	-2806	BA
SE	STORGLACIAEREN	332	20170914	20180913	15N2	68.382	3.4944	1350	-2604	BA
SE	STORGLACIAEREN	332	20170914	20180913	15N3	68.3826	3.4944	1349	-2678	BA
SE	STORGLACIAEREN	332	20170914	20180913	27S2	68.3797	3.488	1491	-660	BA
SE	STORGLACIAEREN	332	20170914	20180913	07C	68.3811	3.4988	1264	-3439	BA
SE	STORGLACIAEREN	332	20170914	20180913	32N5	68.3834	3.4853	1603	567	BA
SE	STORGLACIAEREN	332	20170914	20180913	12S1	68.3805	3.4961	1336	-3099	BA
SE	STORGLACIAEREN	332	20170914	20180913	29C	68.3808	3.4869	1503	22	BA
SE	STORGLACIAEREN	332	20170914	20180913	29S3	68.3792	3.487	1512	72	BA
SE	STORGLACIAEREN	332	20170914	20180913	29S6	68.3776	3.487	1564	-669	BA
SE	STORGLACIAEREN	332	20170914	20180913	15S3	68.3794	3.4945	1352	-2824	BA
SE	STORGLACIAEREN	332	20170914	20180913	21C	68.3809	3.4912	1405	-2164	BA
SE	STORGLACIAEREN	332	20170914	20180913	30N5	68.3834	3.4863	1579	429	BA
SE	STORGLACIAEREN	332	20170914	20180913	30N7	68.3845	3.4863	1602	280	BA
SE	STORGLACIAEREN	332	20170914	20180913	27S4	68.3787	3.4881	1499	-981	BA
SE	STORGLACIAEREN	332	20170914	20180913	10N3	68.3826	3.4971	1309	-2485	BA
SE	STORGLACIAEREN	332	20170914	20180913	08C	68.3811	3.4982	1281	-3420	BA
SE	STORGLACIAEREN	332	20170914	20180913	08N2	68.3821	3.4982	1280	-3420	BA
SE	STORGLACIAEREN	332	20170914	20180913	08S1	68.3805	3.4983	1277	-3466	BA
SE	STORGLACIAEREN	332	20170914	20180913	08S3	68.3795	3.4983	1270	-4007	BA
SE	STORGLACIAEREN	332	20170914	20180913	09C	68.381	3.4977	1298	-3099	BA
SE	STORGLACIAEREN	332	20170914	20180913	10C	68.381	3.4972	1313	-3044	BA
SE	STORGLACIAEREN	332	20170914	20180913	12S4	68.3789	3.4961	1332	-2503	BA
SE	STORGLACIAEREN	332	20170914	20180913	10N2	68.3821	3.4971	1314	-3640	BA
SE	STORGLACIAEREN	332	20170914	20180913	12N3	68.3826	3.496	1328	-2485	BA
SE	STORGLACIAEREN	332	20170914	20180913	10S1	68.3805	3.4972	1311	-2476	BA
SE	STORGLACIAEREN	332	20170914	20180913	10S2	68.38	3.4972	1309	-2714	BA
SE	STORGLACIAEREN	332	20170914	20180913	10S3	68.3794	3.4972	1306	-2531	BA
SE	STORGLACIAEREN	332	20170914	20180913	11C	68.381	3.4966	1326	-4007	BA
SE	STORGLACIAEREN	332	20170914	20180913	12C	68.381	3.4961	1335	-3017	BA
SE	STORGLACIAEREN	332	20170914	20180913	12N2	68.3821	3.4961	1333	-3145	BA
SE	STORGLACIAEREN	332	20170914	20180913	10N1	68.3816	3.4971	1316	-3246	BA
SE	STORGLACIAEREN	332	20180913	20190917	04S1	68.3806	3.5004	1212	-1293	BA
SE	STORGLACIAEREN	332	20180913	20190917	12N3	68.3826	3.496	1328	-614	BA
SE	STORGLACIAEREN	332	20180913	20190917	10S2	68.38	3.4972	1309	-1559	BA
SE	STORGLACIAEREN	332	20180913	20190917	04C	68.3811	3.5004	1206	-2283	BA
SE	STORGLACIAEREN	332	20180913	20190917	08S1	68.3805	3.4983	1277	-2696	BA
SE	STORGLACIAEREN	332	20180913	20190917	19C	68.3809	3.4923	1385	-1036	BA
SE	STORGLACIAEREN	332	20180913	20190917	12C	68.381	3.4961	1335	-2247	BA
SE	STORGLACIAEREN	332	20180913	20190917	11C	68.381	3.4966	1326	-2201	BA
SE	STORGLACIAEREN	332	20180913	20190917	10S3	68.3794	3.4972	1306	-1036	BA
SE	STORGLACIAEREN	332	20180913	20190917	10S1	68.3805	3.4972	1311	-1440	BA
SE	STORGLACIAEREN	332	20180913	20190917	10N2	68.3821	3.4971	1314	-2247	BA
SE	STORGLACIAEREN	332	20180913	20190917	10N1	68.3816	3.4971	1316	-2503	BA
SE	STORGLACIAEREN	332	20180913	20190917	10C	68.381	3.4972	1313	-2292	BA
SE	STORGLACIAEREN	332	20180913	20190917	10N3	68.3826	3.4971	1309	-954	BA
SE	STORGLACIAEREN	332	20180913	20190917	08S3	68.3795	3.4983	1270	-2769	BA
SE	STORGLACIAEREN	332	20180913	20190917	05C	68.3811	3.4999	1228	-2586	BA
SE	STORGLACIAEREN	332	20180913	20190917	08N2	68.3821	3.4982	1280	-926	BA
SE	STORGLACIAEREN	332	20180913	20190917	08C	68.3811	3.4982	1281	-2448	BA
SE	STORGLACIAEREN	332	20180913	20190917	07C	68.3811	3.4988	1264	-2513	BA
SE	STORGLACIAEREN	332	20180913	20190917	06S3	68.3795	3.4994	1243	-1531	BA
SE	STORGLACIAEREN	332	20180913	20190917	06S2	68.38	3.4993	1249	-2861	BA
SE	STORGLACIAEREN	332	20180913	20190917	06S1	68.3805	3.4993	1251	-3448	BA
SE	STORGLACIAEREN	332	20180913	20190917	06N1	68.3816	3.4993	1238	-1972	BA
SE	STORGLACIAEREN	332	20180913	20190917	06C	68.3811	3.4993	1247	-2558	BA
SE	STORGLACIAEREN	332	20180913	20190917	09C	68.381	3.4977	1298	-2558	BA
SE	STORGLACIAEREN	332	20180913	20190917	18S2	68.3798	3.4929	1376	-1907	BA
SE	STORGLACIAEREN	332	20180913	20190917	26N5	68.3835	3.4885	1544	116	BA
SE	STORGLACIAEREN	332	20180913	20190917	25S4	68.3787	3.4891	1477	-706	BA
SE	STORGLACIAEREN	332	20180913	20190917	17N2	68.382	3.4934	1361	-945	BA
SE	STORGLACIAEREN	332	20180913	20190917	25N3	68.3824	3.4891	1507	-559	BA
SE	STORGLACIAEREN	332	20180913	20190917	24C	68.3808	3.4896	1456	66	BA
SE	STORGLACIAEREN	332	20180913	20190917	17N3	68.3825	3.4934	1358	231	BA
SE	STORGLACIAEREN	332	20180913	20190917	22S2	68.3798	3.4907	1399	-1100	BA
SE	STORGLACIAEREN	332	20180913	20190917	22C	68.3809	3.4907	1414	-275	BA
SE	STORGLACIAEREN	332	20180913	20190917	18C	68.3809	3.4929	1377	-1339	BA
SE	STORGLACIAEREN	332	20180913	20190917	27C	68.3808	3.488	1493	754	BA
SE	STORGLACIAEREN	332	20180913	20190917	20S5	68.3782	3.4918	1386	-339	BA
SE	STORGLACIAEREN	332	20180913	20190917	27N2	68.3819	3.488	1496	314	BA
SE	STORGLACIAEREN	332	20180913	20190917	20S4	68.3788	3.4918	1379	-1045	BA
SE	STORGLACIAEREN	332	20180913	20190917	20S3	68.3793	3.4918	1381	-1733	BA
SE	STORGLACIAEREN	332	20180913	20190917	18S4	68.3788	3.4929	1369	-1687	BA
SE	STORGLACIAEREN	332	20180913	20190917	18S5	68.3782	3.4929	1369	-1027	BA
SE	STORGLACIAEREN	332	20180913	20190917	20C	68.3809	3.4918	1395	-440	BA
SE	STORGLACIAEREN	332	20180913	20190917	12N2	68.3821	3.4961	1333	-1632	BA
SE	STORGLACIAEREN	332	20180913	20190917	20N2	68.382	3.4918	1389	275	BA
SE	STORGLACIAEREN	332	20180913	20190917	20S1	68.3804	3.4918	1392	-1513	BA
SE	STORGLACIAEREN	332	20180913	20190917	20S2	68.3798	3.4918	1386	-1531	BA
SE	STORGLACIAEREN	332	20180913	20190917	12S1	68.3805	3.4961	1336	-2558	BA
SE	STORGLACIAEREN	332	20180913	20190917	21C	68.3809	3.4912	1405	-908	BA
SE	STORGLACIAEREN	332	20180913	20190917	30N5	68.3834	3.4863	1579	1612	BA
SE	STORGLACIAEREN	332	20180913	20190917	12S3	68.3794	3.4961	1334	-2769	BA
SE	STORGLACIAEREN	332	20180913	20190917	12S4	68.3789	3.4961	1332	-2173	BA
SE	STORGLACIAEREN	332	20180913	20190917	13C	68.381	3.4955	1342	-2008	BA
SE	STORGLACIAEREN	332	20180913	20190917	14C	68.381	3.495	1350	-1825	BA
SE	STORGLACIAEREN	332	20180913	20190917	15C	68.381	3.4945	1357	-1504	BA
SE	STORGLACIAEREN	332	20180913	20190917	15N2	68.382	3.4944	1350	-1082	BA
SE	STORGLACIAEREN	332	20180913	20190917	15N3	68.3826	3.4944	1349	-431	BA
SE	STORGLACIAEREN	332	20180913	20190917	15S1	68.3804	3.4945	1357	-1990	BA
SE	STORGLACIAEREN	332	20180913	20190917	32N9	68.3856	3.4852	1642	3080	BA
SE	STORGLACIAEREN	332	20180913	20190917	32N7	68.3845	3.4852	1619	2134	BA
SE	STORGLACIAEREN	332	20180913	20190917	17C	68.3809	3.4934	1370	-1339	BA
SE	STORGLACIAEREN	332	20180913	20190917	30N7	68.3845	3.4863	1602	1546	BA
SE	STORGLACIAEREN	332	20180913	20190917	29S6	68.3776	3.487	1564	979	BA
SE	STORGLACIAEREN	332	20180913	20190917	29S3	68.3792	3.487	1512	985	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
SE	STORGLACIAEREN	332	20180913	20190917	29C	68.3808	3.4869	1503	985	BA
SE	STORGLACIAEREN	332	20180913	20190917	15S5	68.3783	3.4945	1353	-1045	BA
SE	STORGLACIAEREN	332	20180913	20190917	28N7	68.3845	3.4874	1586	930	BA
SE	STORGLACIAEREN	332	20180913	20190917	28N5	68.3835	3.4874	1565	600	BA
SE	STORGLACIAEREN	332	20180913	20190917	16C	68.3809	3.4939	1364	-1779	BA
SE	STORGLACIAEREN	332	20180913	20190917	27S4	68.3787	3.4881	1499	-422	BA
SE	STORGLACIAEREN	332	20180913	20190917	15S3	68.3794	3.4945	1352	-2036	BA
SE	STORGLACIAEREN	332	20180913	20190917	27S2	68.3797	3.488	1491	638	BA
SE	STORGLACIAEREN	332	20180913	20190917	32N5	68.3834	3.4853	1603	1716	BA
SJ - Svalbard (Norway)										
SJ	GROENFJORD E	3947	20170910	20180824	3	77.89484	14.34479	368	-1017	BA
SJ	GROENFJORD E	3947	20170910	20180824	7	77.90868	14.3304	225	-1575	BA
SJ	GROENFJORD E	3947	20170910	20180824	4	77.8995	14.34107	290	-1305	BA
SJ	GROENFJORD E	3947	20170910	20180824	1	77.88735	14.36009	397	-729	BA
SJ	GROENFJORD E	3947	20170910	20180824	11	77.9098	14.36329	198	-1386	BA
SJ	GROENFJORD E	3947	20170910	20180824	15	77.88317	14.41935	308	-1359	BA
SJ	GROENFJORD E	3947	20170910	20180824	19	77.896765	14.333297	322	-1125	BA
SJ	GROENFJORD E	3947	20170910	20180824	21	77.89093	14.3447	384	-738	BA
SJ	GROENFJORD E	3947	20170910	20180824	22	77.88911	14.39754	347	-1134	BA
SJ	GROENFJORD E	3947	20170910	20180824	23	77.885624	14.41202	407	-927	BA
SJ	GROENFJORD E	3947	20170910	20180824	5	77.90376	14.35199	247	-1206	BA
SJ	GROENFJORD E	3947	20180824	20190911	6a	77.91602	14.33775	147	-2403	BA
SJ	GROENFJORD E	3947	20180824	20190911	7	77.90868	14.3304	225	-1746	BA
SJ	GROENFJORD E	3947	20180824	20190911	6	77.91352	14.34323	158	-2106	BA
SJ	GROENFJORD E	3947	20180824	20190911	5	77.90376	14.35199	247	-1669	BA
SJ	GROENFJORD E	3947	20180824	20190911	4	77.8995	14.34107	290	-1341	BA
SJ	GROENFJORD E	3947	20180824	20190911	21	77.89093	14.3447	384	-306	BA
SJ	GROENFJORD E	3947	20180824	20190911	10	77.90907	14.34696	202	-1953	BA
SJ	GROENFJORD E	3947	20180824	20190911	18	77.90578	14.33567	236	-1368	BA
SJ	GROENFJORD E	3947	20180824	20190911	1	77.88735	14.36009	397	-477	BA
SJ	GROENFJORD E	3947	20180824	20190911	16	77.92001	14.33533	107	-2515	BA
SJ	GROENFJORD E	3947	20180824	20190911	13	77.92378	14.33317	70	-3204	BA
SJ	GROENFJORD E	3947	20180824	20190911	14	77.89966	14.37346	261	-1548	BA
SJ	GROENFJORD E	3947	20180824	20190408	1	77.88735	14.36009	397	-234	BW
SJ	GROENFJORD E	3947	20180824	20190408	7	77.90868	14.3304	225	-205	BW
SJ	GROENFJORD E	3947	20180824	20190408	10	77.90907	14.34696	202	-249	BW
SJ	GROENFJORD E	3947	20180824	20190408	21	77.89093	14.3447	384	-276	BW
SJ	GROENFJORD E	3947	20180824	20190408	13	77.92378	14.33317	70	-125	BW
SJ	GROENFJORD E	3947	20180824	20190408	14	77.89966	14.37346	261	-193	BW
SJ	GROENFJORD E	3947	20180824	20190408	16	77.92001	14.33533	107	-155	BW
SJ	GROENFJORD E	3947	20180824	20190408	6a	77.91602	14.33775	147	-192	BW
SJ	GROENFJORD E	3947	20180824	20190408	6	77.91352	14.34323	158	-358	BW
SJ	GROENFJORD E	3947	20180824	20190408	18	77.90578	14.33567	236	-364	BW
SJ	GROENFJORD E	3947	20180824	20190408	5	77.90376	14.35199	247	-168	BW
SJ	GROENFJORD E	3947	20180824	20190408	4	77.8995	14.34107	290	-327	BW
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-4-2017			388	-930	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG 2.5 -2016			270	-1670	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-9 2017			727	1030	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-8.5 2017			707	650	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG 3 -2017			318	-1520	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-7.5 2017			637	350	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-7 2017			593	120	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG 3.5 -2017			351	-1190	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-6.5 2015			560	-50	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-8 2017			670	650	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG 4.5 -2017			415	-950	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-2-2017			215	-2010	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG 5 -2015			460	-780	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-0_2017			81	-2470	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-1-2017			129	-2190	BA
SJ	KONGSVEGEN	1456	20170914	20180999	KNG-6 2018			532	-130	BA
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-1-2017			129	30	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-8.5 2017			707	580	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-8 2017			670	580	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-7 2017			593	470	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-6.5 2015			560	420	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-6 2018			532	520	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-9 2017			727	590	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-2-2017			215	170	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-7.5 2017			637	530	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-0_2017			81	140	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG 5 -2015			460	350	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG 4.5 -2017			415	360	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG 3.5 -2017			351	330	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG 3 -2017			318	210	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG 2.5 -2016			270	260	BW
SJ	KONGSVEGEN	1456	20170999	20180499	KNG-4-2017			388	310	BW
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-7.5 2017			637	-180	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG 5 -2015			460	-1130	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-1-2017			129	-2210	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-7 2017			593	-350	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-9 2017			727	440	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-4-2017			388	-1240	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG 4.5 -2017			415	-1310	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-6 2018			532	-650	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-0_2017			81	-2610	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-6.5 2015			560	-470	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-2-2017			215	-2170	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG 3.5 -2017			351	-1530	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG 3 -2017			318	-1740	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-8 2017			670	70	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG 2.5 -2016			270	-1930	BS
SJ	KONGSVEGEN	1456	20180499	20180999	KNG-8.5 2017			707	70	BS
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-7.5 2019			637	-110	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-8 2019			669	320	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-6.5 2015			560	-170	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-8.5 2019			708	-310	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-7 2017			592	0	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-6 2019			532	-450	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-2-2018			207	-1610	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG_7N1-2012			641	-80	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG 5.5 -2019			500	-490	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG 5 -2015			459	-780	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG 4.5 -2017			415	-810	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-9 2019			727	0	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-4-2017			388	-1240	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG 3.5 -2017			351	-1120	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG 3 -2019			317	-1120	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG 2.5 -2018			264	-1280	BA
SJ	KONGSVEGEN	1456	20180999	20190999	KNG-1-2019			127	-1910	BA
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-2-2018			207	210	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-8.5 2019			708	780	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-8 2019			669	760	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-7.5 2019			637	710	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-7 2017			592	640	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-6.5 2015			560	600	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-6 2019			532	550	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-4-2017			388	370	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-9 2019			727	760	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG-1-2019			127	120	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG_7N1-2012			641	590	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG 3.5 -2017			351	450	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG 2.5 -2018			264	410	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG 5 -2015			459	540	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG 4.5 -2017			415	510	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG 3 -2019			317	280	BW
SJ	KONGSVEGEN	1456	20180999	20190499	KNG 5.5 -2019			500	540	BW
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-2-2018			207	-1820	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-8.5 2019			708	-1090	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-8 2019			669	-440	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG 2.5 -2018			264	-1680	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-7.5 2019			637	-810	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-7 2017			592	-640	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG 3 -2019			317	-1400	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-1-2019			127	-2030	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-6 2019			532	-1000	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG 3.5 -2017			351	-1570	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-4-2017			388	-1610	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-9 2019			727	-770	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG 4.5 -2017			415	-1320	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG_7N1-2012			641	-670	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG 5 -2015			459	-1320	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG 5.5 -2019			500	-1020	BS
SJ	KONGSVEGEN	1456	20190499	20190999	KNG-6.5 2015			560	-770	BS
SJ	NORDENSKIOELDBREEN	3479	20179999	20189999	S2	78.6329	17.067	230	-1800	BA
SJ	NORDENSKIOELDBREEN	3479	20179999	20189999	S3S	78.6302	17.1339	350	-1600	BA
SJ	NORDENSKIOELDBREEN	3479	20179999	20189999	S10	78.79	17.4496	1053	900	BA
SJ	NORDENSKIOELDBREEN	3479	20179999	20189999	S5	78.675	17.1623	456	-1700	BA
SJ	NORDENSKIOELDBREEN	3479	20179999	20189999	S6	78.6942	17.1581	529	-1150	BA
SJ	NORDENSKIOELDBREEN	3479	20179999	20189999	S7	78.7212	17.253	584	-480	BA
SJ	NORDENSKIOELDBREEN	3479	20179999	20180408	S10	78.79	17.4496	1053	780	BW
SJ	NORDENSKIOELDBREEN	3479	20179999	20180407	S5	78.675	17.1623	456	30	BW
SJ	NORDENSKIOELDBREEN	3479	20179999	20180407	S3S	78.6302	17.1339	350	50	BW
SJ	NORDENSKIOELDBREEN	3479	20179999	20180407	S6	78.6942	17.1581	529	200	BW
SJ	NORDENSKIOELDBREEN	3479	20179999	20180407	S2	78.6329	17.067	230	20	BW
SJ	NORDENSKIOELDBREEN	3479	20179999	20180407	S7	78.7212	17.253	584	410	BW
SJ	NORDENSKIOELDBREEN	3479	20180407	20189999	S2	78.6329	17.067	230	-1820	BS
SJ	NORDENSKIOELDBREEN	3479	20180407	20189999	S7	78.7212	17.253	584	-890	BS
SJ	NORDENSKIOELDBREEN	3479	20180407	20189999	S6	78.6942	17.1581	529	-1350	BS
SJ	NORDENSKIOELDBREEN	3479	20180407	20189999	S5	78.675	17.1623	456	-1730	BS
SJ	NORDENSKIOELDBREEN	3479	20180407	20189999	S3S	78.6302	17.1339	350	-1650	BS
SJ	NORDENSKIOELDBREEN	3479	20180408	20189999	S10	78.79	17.4496	1053	120	BS
SJ	NORDENSKIOELDBREEN	3479	20189999	20199999	S7	78.7212	17.253	584	-80	BA
SJ	NORDENSKIOELDBREEN	3479	20189999	20199999	S10	78.79	17.4496	1053	780	BA
SJ	NORDENSKIOELDBREEN	3479	20189999	20199999	S8	78.7383	17.3245	667	560	BA
SJ	NORDENSKIOELDBREEN	3479	20189999	20199999	S2	78.6329	17.067	230	-2120	BA
SJ	NORDENSKIOELDBREEN	3479	20189999	20199999	S11	78.8114	17.454	1147	840	BA
SJ	NORDENSKIOELDBREEN	3479	20189999	20190408	S9	78.7586	17.401	822	750	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190408	S10	78.79	17.4496	1053	860	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190408	S7	78.7212	17.253	584	560	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190408	S11	78.8114	17.454	1147	750	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190407	S6	78.6942	17.1581	529	230	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190407	S2	78.6329	17.067	230	60	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190407	S5	78.675	17.1623	456	110	BW
SJ	NORDENSKIOELDBREEN	3479	20189999	20190407	S3S	78.6302	17.1339	350	150	BW
SJ	NORDENSKIOELDBREEN	3479	20190407	20199999	S2	78.6329	17.067	230	-2180	BS
SJ	NORDENSKIOELDBREEN	3479	20190408	20199999	S10	78.79	17.4496	1053	-90	BS
SJ	NORDENSKIOELDBREEN	3479	20190408	20199999	S11	78.8114	17.454	1147	-90	BS
SJ	NORDENSKIOELDBREEN	3479	20190408	20199999	S7	78.7212	17.253	584	-650	BS
SJ	NORDENSKIOELDBREEN	3479	20190408	20199999	S8	78.7383	17.3245	667	-350	BS
SJ	WALDEMARBREEN	2307	20179999	20189999	4			156	-2767	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	15			339	-1229	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	8			202	-2011	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	7			198	-2175	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	5			165	-2703	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	2			147	-3404	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	6			201	-2357	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	9			223	-1820	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	16			356	-1574	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	3			158	-3076	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	14			308	-1656	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
SJ	WALDEMARBREEN	2307	20179999	20189999	13			291	-1538	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	12			273	-2193	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	11			263	-1538	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	10			255	-2002	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	1			145	-3103	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	17			382	-1411	BA
SJ	WALDEMARBREEN	2307	20179999	20189999	18			423	-1119	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	10			226	-1297	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	3			154	-2251	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	9			221	-918	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	8			198	-2191	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	7			194	-2148	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	6			180	-2005	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	5			161	-2113	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	1			143	-2450	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	11			230	-1495	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	17			337	-911	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	13			260	-1776	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	20			423	-328	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	14			271	-1138	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	15			289	-867	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	16			306	-1016	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	12			253	-1208	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	2			143	-2515	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	4			152	-1937	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	18			354	-906	BA
SJ	WALDEMARBREEN	2307	20189999	20199999	19			381	-692	BA
TJ - Tajikistan										
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM02	38.875846	73.007031	4670	-1413	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM07	38.859878	72.9993	4965	-189	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM04	38.870794	73.005464	4760	-1431	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM03	38.875331	73.005911	4685	-1773	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM01	38.877431	73.008412	4640	-1503	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM05	38.863923	73.00268	4880	-990	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	ZM06	38.858082	72.995496	5060	-90	BA
TJ	EAST ZULMART (GLACIER NO 139)	13493	20180905	20190910	Shurf	38.860879	72.986496	5315	460	BA
US - United States of America										
US	GULKANA	90	20170822	20180902	T	63.2789	-145.460608	1869	960	BA
US	GULKANA	90	20170822	20180901	AB	63.272055	-145.41668	1546	-2130	BA
US	GULKANA	90	20170822	20180901	AU	63.264893	-145.416752	1454	-2710	BA
US	GULKANA	90	20170822	20180423	AB	63.272055	-145.41668	1546	710	BW
US	GULKANA	90	20170822	20180423	AU	63.264893	-145.416752	1454	680	BW
US	GULKANA	90	20170823	20180901	D	63.284888	-145.385046	1854	330	BA
US	GULKANA	90	20170823	20180901	B	63.285514	-145.410337	1693	-720	BA
US	GULKANA	90	20170823	20180422	B	63.285514	-145.410337	1693	950	BW
US	GULKANA	90	20170823	20180422	D	63.284888	-145.385046	1854	1270	BW
US	GULKANA	90	20179999	20180902	X	63.285958	-145.480202	2030	1280	BA
US	GULKANA	90	20179999	20180901	V	63.294753	-145.420605	1878	140	BA
US	GULKANA	90	20179999	20180423	V	63.294753	-145.420605	1878	1300	BW
US	GULKANA	90	20180901	20190828	AU	63.264893	-145.416752	1454	-4290	BA
US	GULKANA	90	20180901	20190828	V	63.294753	-145.420605	1878	-1720	BA
US	GULKANA	90	20180901	20190828	D	63.284888	-145.385046	1854	-720	BA
US	GULKANA	90	20180901	20190828	B	63.285514	-145.410337	1693	-2460	BA
US	GULKANA	90	20180901	20190828	AB	63.272055	-145.41668	1546	-3480	BA
US	GULKANA	90	20180901	20190426	AU	63.264893	-145.416752	1454	630	BW
US	GULKANA	90	20180901	20190425	AB	63.272055	-145.41668	1546	760	BW
US	GULKANA	90	20180901	20190425	D	63.284888	-145.385046	1854	1200	BW
US	GULKANA	90	20180901	20190425	V	63.294753	-145.420605	1878	1190	BW
US	GULKANA	90	20180901	20190425	B	63.285514	-145.410337	1693	960	BW
US	GULKANA	90	20180902	20190828	X	63.285958	-145.480202	2030	790	BA
US	GULKANA	90	20180902	20190828	T	63.2789	-145.460608	1869	-130	BA
US	GULKANA	90	20180902	20190426	T	63.2789	-145.460608	1869	1450	BW
US	GULKANA	90	20180902	20190426	X	63.285958	-145.480202	2030	1370	BW
US	LEMON CREEK	3334	20171007	20180913	A	58.400605	-134.361918	818	-4740	BA
US	LEMON CREEK	3334	20171007	20180913	B	58.393298	-134.352043	938	-3190	BA
US	LEMON CREEK	3334	20171007	20180913	C	58.38089	-134.345995	1061	-1550	BA
US	LEMON CREEK	3334	20171007	20180912	D	58.365092	-134.355004	1169	-1330	BA
US	LEMON CREEK	3334	20171007	20180507	C	58.38089	-134.345995	1061	2150	BW
US	LEMON CREEK	3334	20171007	20180507	A	58.400605	-134.361918	818	980	BW
US	LEMON CREEK	3334	20171007	20180507	B	58.393298	-134.352043	938	1570	BW
US	LEMON CREEK	3334	20171007	20180506	D	58.365092	-134.355004	1169	2260	BW
US	LEMON CREEK	3334	20171008	20180912	F	58.36103	-134.34226	1226	-1770	BA
US	LEMON CREEK	3334	20171008	20180912	E	58.361634	-134.337447	1233	-320	BA
US	LEMON CREEK	3334	20171008	20180506	F	58.36103	-134.34226	1226	1890	BW
US	LEMON CREEK	3334	20171008	20180506	E	58.361634	-134.337447	1233	3240	BW
US	LEMON CREEK	3334	20179999	20180706	G	58.361808	-134.360995	1181	1010	BA
US	LEMON CREEK	3334	20179999	20180706	H	58.372287	-134.346257	1127	1110	BA
US	LEMON CREEK	3334	20179999	20180508	H	58.372287	-134.346257	1127	2230	BW
US	LEMON CREEK	3334	20179999	20180508	G	58.361808	-134.360995	1181	2090	BW
US	LEMON CREEK	3334	20180912	20190927	F	58.36103	-134.34226	1226	-2850	BA
US	LEMON CREEK	3334	20180912	20190927	D	58.365092	-134.355004	1169	-1880	BA
US	LEMON CREEK	3334	20180912	20190413	F	58.36103	-134.34226	1226	1750	BW
US	LEMON CREEK	3334	20180912	20190410	D	58.365092	-134.355004	1169	2160	BW
US	LEMON CREEK	3334	20180913	20190928	A	58.400605	-134.361918	818	-5590	BA
US	LEMON CREEK	3334	20180913	20190928	C	58.38089	-134.345995	1061	-2600	BA
US	LEMON CREEK	3334	20180913	20190928	B	58.393298	-134.352043	938	-4550	BA
US	LEMON CREEK	3334	20180913	20190411	C	58.38089	-134.345995	1061	2100	BW
US	LEMON CREEK	3334	20180913	20190411	A	58.400605	-134.361918	818	880	BW
US	LEMON CREEK	3334	20180913	20190411	B	58.393298	-134.352043	938	1410	BW
US	LEMON CREEK	3334	20189999	20190927	E	58.361634	-134.337447	1233	-1740	BA
US	LEMON CREEK	3334	20189999	20190413	E	58.361634	-134.337447	1233	2710	BW
US	SOUTH CASCADE	205	20179999	20180928	A	48.348578	-121.046145	2066	-490	BA
US	SOUTH CASCADE	205	20179999	20180928	B	48.347541	-121.051867	2024	640	BA
US	SOUTH CASCADE	205	20179999	20180927	C	48.351669	-121.055476	1954	-340	BA

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
US	SOUTH CASCADE	205	20179999	20180927	E	48.363043	-121.061969	1735	-4250	BA
US	SOUTH CASCADE	205	20179999	20180927	P1	48.358328	-121.059826	1826	-1050	BA
US	SOUTH CASCADE	205	20179999	20180425	E	48.363043	-121.061969	1735	3050	BW
US	SOUTH CASCADE	205	20179999	20180425	P1	48.358328	-121.059826	1826	3590	BW
US	SOUTH CASCADE	205	20179999	20180424	C	48.351669	-121.055476	1954	4070	BW
US	SOUTH CASCADE	205	20179999	20180423	B	48.347541	-121.051867	2024	4010	BW
US	SOUTH CASCADE	205	20179999	20180420	A	48.348578	-121.046145	2066	3810	BW
US	SOUTH CASCADE	205	20180927	20191012	C	48.351669	-121.055476	1922	-2210	BA
US	SOUTH CASCADE	205	20180927	20191010	P1	48.358328	-121.059826	1808	-2450	BA
US	SOUTH CASCADE	205	20180927	20191010	E	48.363043	-121.061969	1689	-5050	BA
US	SOUTH CASCADE	205	20180927	20190602	E	48.363043	-121.061969	1689	880	BW
US	SOUTH CASCADE	205	20180927	20190602	P1	48.358328	-121.059826	1808	1600	BW
US	SOUTH CASCADE	205	20180927	20190601	C	48.351669	-121.055476	1922	1740	BW
US	SOUTH CASCADE	205	20180928	20191012	B	48.347541	-121.051867	2008	-660	BA
US	SOUTH CASCADE	205	20180928	20191012	A	48.348578	-121.046145	2046	-2020	BA
US	SOUTH CASCADE	205	20180928	20190601	A	48.348578	-121.046145	2046	1990	BW
US	SOUTH CASCADE	205	20180928	20190531	B	48.347541	-121.051867	2008	2630	BW
US	SPERRY	218	20179999	20180918	A	48.624586	-113.758407	2381	-1250	BA
US	SPERRY	218	20179999	20180918	C	48.622537	-113.758662	2457	-1170	BA
US	SPERRY	218	20179999	20180918	E	48.622503	-113.762338	2454	-1320	BA
US	SPERRY	218	20179999	20180918	F	48.626239	-113.752878	2351	-1550	BA
US	SPERRY	218	20179999	20180918	G	48.62218	-113.754802	2479	-600	BA
US	SPERRY	218	20179999	20180918	Z	48.6195	-113.758524	2585	2910	BA
US	SPERRY	218	20179999	20180918	B	48.626375	-113.755098	2317	-980	BA
US	SPERRY	218	20179999	20180515	Z	48.6195	-113.758524	2585	5940	BW
US	SPERRY	218	20179999	20180515	A	48.624586	-113.758407	2381	2860	BW
US	SPERRY	218	20179999	20180515	B	48.626375	-113.755098	2317	3220	BW
US	SPERRY	218	20179999	20180515	C	48.622537	-113.758662	2457	2830	BW
US	SPERRY	218	20179999	20180515	E	48.622503	-113.762338	2454	2430	BW
US	SPERRY	218	20179999	20180515	G	48.62218	-113.754802	2479	2630	BW
US	SPERRY	218	20179999	20180515	F	48.626239	-113.752878	2351	2400	BW
US	SPERRY	218	20189999	20190925	C	48.622537	-113.758662	2456	-1940	BA
US	SPERRY	218	20189999	20190925	G	48.62218	-113.754802	2483	-2200	BA
US	SPERRY	218	20189999	20190925	F	48.626239	-113.752878	2344	-2430	BA
US	SPERRY	218	20189999	20190925	Z	48.6195	-113.758524	2578	810	BA
US	SPERRY	218	20189999	20190925	E	48.622503	-113.762338	2452	-3200	BA
US	SPERRY	218	20189999	20190925	A	48.624586	-113.758407	2375	-2300	BA
US	SPERRY	218	20189999	20190514	E	48.622503	-113.762338	2452	1620	BW
US	SPERRY	218	20189999	20190514	G	48.62218	-113.754802	2483	2190	BW
US	SPERRY	218	20189999	20190514	A	48.624586	-113.758407	2375	2120	BW
US	SPERRY	218	20189999	20190514	C	48.622537	-113.758662	2456	2230	BW
US	SPERRY	218	20189999	20190514	Z	48.6195	-113.758524	2578	2340	BW
US	SPERRY	218	20189999	20190514	F	48.626239	-113.752878	2344	1600	BW
US	TAKU	124	20179999	20180802	MG6	58.836365	-134.170497	1830	2810	BA
US	TAKU	124	20179999	20180731	MG5	58.786696	-134.133225	1826	1830	BA
US	TAKU	124	20179999	20180730	MG3	58.814373	-134.225992	1783	1960	BA
US	TAKU	124	20179999	20180726	MG2	58.809432	-134.194943	1755	2120	BA
US	TAKU	124	20179999	20180723	DG3	58.720529	-134.090149	1350	1260	BA
US	TAKU	124	20179999	20180722	MG1	58.717704	-134.212238	1405	930	BA
US	TAKU	124	20179999	20180719	C161	58.632957	-134.418588	1480	1260	BA
US	TAKU	124	20179999	20180719	NWB1	58.674021	-134.519123	1504	1490	BA
US	TAKU	124	20179999	20180718	TKG2	58.679379	-134.326014	1269	930	BA
US	TAKU	124	20179999	20180718	TKG7	58.688654	-134.382797	1339	1100	BA
US	TAKU	124	20179999	20180716	TR2	58.58931	-134.337431	1319	1510	BA
US	TAKU	124	20179999	20180714	SWB2	58.574484	-134.249709	1096	810	BA
US	TAKU	124	20179999	20180714	DG1	58.617588	-134.130047	1018	480	BA
US	TAKU	124	20179999	20180713	TKG3	58.656386	-134.277751	1203	1070	BA
US	TAKU	124	20179999	20180713	TR1	58.621009	-134.319166	1242	880	BA
US	TAKU	124	20179999	20180711	TKG5	58.603878	-134.180019	988	560	BA
US	TAKU	124	20179999	20180710	TKG4	58.634407	-134.237005	1112	930	BA
US	TAKU	124	20189999	20190717	MG3	58.814373	-134.225992	1785	1910	BA
US	TAKU	124	20189999	20190716	MG6	58.836365	-134.170497	1830	2030	BA
US	TAKU	124	20189999	20190715	MG2	58.809432	-134.194943	1755	1990	BA
US	TAKU	124	20189999	20190711	MG1	58.717704	-134.212238	1412	700	BA
US	TAKU	124	20189999	20190710	TKG7	58.688654	-134.382797	1325	890	BA
US	TAKU	124	20189999	20190709	C161	58.632957	-134.418588	1483	1470	BA
US	TAKU	124	20189999	20190707	TR1	58.621009	-134.319166	1242	690	BA
US	TAKU	124	20189999	20190706	TKG4	58.634407	-134.237005	1116	690	BA
US	TAKU	124	20189999	20190706	TKG3	58.656386	-134.277751	1203	750	BA
US	TAKU	124	20189999	20190701	SWB1			1228	1510	BA
US	TAKU	124	20189999	20190701	SWB2	58.574484	-134.249709	1105	890	BA
US	WOLVERINE	94	20170908	20180907	B	60.404161	-148.906672	1063	-1490	BA
US	WOLVERINE	94	20170908	20180907	S	60.405785	-148.876417	1235	-940	BA
US	WOLVERINE	94	20170908	20180907	N	60.39643	-148.90871	1004	-2230	BA
US	WOLVERINE	94	20170908	20180505	S	60.405785	-148.876417	1235	2230	BW
US	WOLVERINE	94	20170908	20180501	N	60.39643	-148.90871	1004	1290	BW
US	WOLVERINE	94	20170908	20180501	B	60.404161	-148.906672	1063	1460	BW
US	WOLVERINE	94	20170909	20180906	C	60.419739	-148.920717	1295	300	BA
US	WOLVERINE	94	20170909	20180501	C	60.419739	-148.920717	1295	1980	BW
US	WOLVERINE	94	20170910	20180907	AU	60.380534	-148.918335	619	-5930	BA
US	WOLVERINE	94	20170910	20180506	AU	60.380534	-148.918335	619	230	BW
US	WOLVERINE	94	20170911	20180908	T	60.418867	-148.891601	1370	220	BA
US	WOLVERINE	94	20170911	20180906	Y	60.424946	-148.937049	1370	820	BA
US	WOLVERINE	94	20170911	20180502	Y	60.424946	-148.937049	1370	2390	BW
US	WOLVERINE	94	20170911	20180501	T	60.418867	-148.891601	1370	2150	BW
US	WOLVERINE	94	20180907	20190919	B	60.404161	-148.906672	1063	-2650	BA
US	WOLVERINE	94	20180907	20190909	AU	60.380534	-148.918335	619	-8810	BA
US	WOLVERINE	94	20180907	20190907	N	60.39643	-148.90871	1004	-2990	BA
US	WOLVERINE	94	20180907	20190523	AU	60.380534	-148.918335	619	0	BW
US	WOLVERINE	94	20180907	20190521	B	60.404161	-148.906672	1063	1640	BW
US	WOLVERINE	94	20180907	20190521	N	60.39643	-148.90871	1004	1340	BW
US	WOLVERINE	94	20189999	20190919	Y	60.424946	-148.937049	1370	900	BA
US	WOLVERINE	94	20189999	20190919	T	60.418867	-148.891601	1370	820	BA
US	WOLVERINE	94	20189999	20190919	C	60.419739	-148.920717	1295	220	BA
US	WOLVERINE	94	20189999	20190907	S	60.405785	-148.876417	1235	-170	BA
US	WOLVERINE	94	20189999	20190522	T	60.418867	-148.891601	1370	3350	BW

PU	GLACIER_NAME	WGMS_ID	FROM	TO	POINT_ID	LAT	LON	ELEV	MB	MB_CODE
US	WOLVERINE	94	20189999	20190522	C	60.419739	-148.920717	1295	3310	BW
US	WOLVERINE	94	20189999	20190522	Y	60.424946	-148.937049	1370	4000	BW
US	WOLVERINE	94	20189999	20190521	S	60.405785	-148.876417	1235	3470	BW

APPENDIX - Table 6

CHANGES IN AREA, VOLUME AND THICKNESS
FROM GEODETIC SURVEYS (of glaciers with glac. mass-balance observations in 2018 and 2019)

PU	Political unit, alphabetic 2-digit country code (cf. www.iso.org)
GLACIER NAME	Name of the glacier in capital letters, cf. Appendix Table 1
WGMS ID	Key identifier of the glacier, cf. Appendix Table 1
FROM	Date of the first geodetic survey, in the format YYYYMMDD*
TO	Date of the second geodetic survey, in the format YYYYMMDD*
AREA	Glacier area (in km^2) at the data of the second geodetic survey
AREA CHG	Change in area between the surveys in 1,000 square metres
THICKNESS CHG	Change in thickness between the surveys in millimetres
INVESTIGATORS	Names of the investigators (cf. Section 9)
REFERENCES	Literature related to reported geodetic surveys

*Unknown month or day are each replaced by „99“

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
AQ - Antarctica									
AQ	BAHIA DEL DIABLO	2665	20010399	20110399	12.9		-2550	S. Marinsek, E. Ermolin	Marinsek, S., and E. Ermolin, 2015, Ann. Glaciol., 56, 141-146, 10.3189/2015AoG70A958
AQ	HURD	3367	19561215	20001215	4.7	-510	-3600		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Molina, C., et al., 2007, Ann. Glaciol., 46, 43-49, 10.3189/172756407782871765
AQ	JOHNSONS	3366	19569999	20009999	5.6	-10	-7500		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Molina, C., et al., 2007, Ann. Glaciol., 46, 43-49, 10.3189/172756407782871765
AR - Argentina									
AR	AGUA NEGRA	4532	20000216	20120219	1.1		-6538	Thorsten Seehaus	Braun et al. 2019; Nature Climate Change 9,130-136, DOI:10.1038/s41558-018-0375-7
AR	AGUA NEGRA	4532	20000220	20130404	1.2	-150	-4586	Pierre Pitte, Hernán Gargantini	
AR	AGUA NEGRA	4532	20000399	20180499	1.1		-9862	Ines Dussaillant	Dussaillant et al. (2019); Nature Geoscience 12, 802–808, doi: 10.1038/s41561-019-0432-5.
AR	BROWN SUPERIOR	3903	20000216	20120219	0.2		-5203	Thorsten Seehaus	Braun et al. 2019; Nature Climate Change 9,130-136, DOI:10.1038/s41558-018-0375-7
AR	BROWN SUPERIOR	3903	20000399	20180499	0.2		-4008	Ines Dussaillant	Dussaillant et al. (2019); Nature Geoscience 12, 802–808, doi: 10.1038/s41561-019-0432-5.
AR	BROWN SUPERIOR	3903	20140424	20150503	0.2	-7	-2652	Gabriel Cabrera	WGMS (2017): GGCB No. 2 (2014-2015).
AR	CONCONTA NORTE	3902	20000216	20120219	0.1		-2845	Thorsten Seehaus	Braun et al. 2019; Nature Climate Change 9,130-136, DOI:10.1038/s41558-018-0375-7
AR	CONCONTA NORTE	3902	20000399	20180499	0.1		-5860	Ines Dussaillant	Dussaillant et al. (2019); Nature Geoscience 12, 802–808, doi: 10.1038/s41561-019-0432-5.
AR	CONCONTA NORTE	3902	20140423	20150506	0.1	-8	-3211	Gabriel Cabrera	WGMS (2017): GGCB No. 2 (2014-2015).
AR	DE LOS TRES	1675	19630301	19980315	1	-60	-2340		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Popovnin, V.V., et al., 2006, Mater. Glyatsol. Issled., 100, 141-151
AR	LOS AMARILLOS	3904	20140305	20150399	0.8	-72	-1219	Gabriel Cabrera	WGMS (2017): GGCB No. 2 (2014-2015).
AR	MARTIAL ESTE	2000	19840315	19980315	0.1	-10	-7000		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Strelin, J., and R. Iturraspe, 2007, Global Planet. Change, 59, 17-26, 10.1016/j.gloplacha.2006.11.019
AT - Austria									
AT	HINTEREIS F.	491	18949999	19200701	11.3	-260	-9880		Finsterwalder, Rü., and H. Rentsch, 1980, Z. Gletsch.kd. Glazialgeol., 16, 111-115; Finsterwalder, Rü., and H. Rentsch, 1992, Z. Gletsch.kd. Glazialgeol., 27/28, 165-172
AT	HINTEREIS F.	491	19200701	19400701	10.5	-820	-12600		Finsterwalder, Rü., and H. Rentsch, 1980, Z. Gletsch.kd. Glazialgeol., 16, 111-115; Finsterwalder, Rü., and H. Rentsch, 1992, Z. Gletsch.kd. Glazialgeol., 27/28, 165-172
AT	HINTEREIS F.	491	19400701	19530701	10.2	-230	-11050		Finsterwalder, Rü., and H. Rentsch, 1980, Z. Gletsch.kd. Glazialgeol., 16, 111-115; Finsterwalder, Rü., and H. Rentsch, 1980, Z. Gletsch.kd. Glazialgeol., 16, 111-115
AT	HINTEREIS F.	491	19530904	19640920			-8824		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	19539999	19599999			-2880		Finsterwalder, Rü., and H. Rentsch, 1980, Z. Gletsch.kd. Glazialgeol., 16, 111-115
AT	HINTEREIS F.	491	19599999	19699999	9.7		-1500		Finsterwalder, Rü., and H. Rentsch, 1980, Z. Gletsch.kd. Glazialgeol., 16, 111-115
AT	HINTEREIS F.	491	19640920	19670901			1529		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	19670901	19690901			-4588		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	19690901	19790830			3176		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	19699999	19799999	9.1	100	-1363		PSFG (1985): FoG 1975-1980 (Vol. IV).
AT	HINTEREIS F.	491	19790830	19919999			-15412		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	19799999	19919999	8.9	-991	-9275		WGMS (1998): FoG 1990-1995 (Vol. VII).
AT	HINTEREIS F.	491	19910901	19970901	8.5	-167	-3509	Ludwig N. Braun	WGMS (2005): FoG 1995-2000 (Vol. VIII).
AT	HINTEREIS F.	491	19919999	19970912			-5176		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	19970912	20060909			-11882		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	HINTEREIS F.	491	20011011	20020918	7.9	-161	-845	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20011011	20111004	6.8	-1240	-14507	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20020918	20030926	7.7	-197	-3545	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20030926	20041005	7.6	-59	-783	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20041005	20051012	7.5	-95	-1172	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20051012	20061008	7.4	-127	-2437	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20061008	20071011	7.3	-107	-1544	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20071011	20080909	7.1	-128	-1414	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20080909	20090930	7	-100	-1269	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20090930	20101008	6.9	-169	-836	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	HINTEREIS F.	491	20101008	20111004	6.8	-97	-1454	Christoph Klug, Stephan Galos, Lorenzo Rieg	Klug et al. (2018); The Cryosphere, 12, 833-849 p.
AT	JAMTAL F.	480	19960901	20020919			-2353		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	JAMTAL F.	480	20020919	20061001			-5882		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	KESSELWAND F.	507	19690901	19710818			706		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	KESSELWAND F.	507	19710818	19970912			-4118		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	KESSELWAND F.	507	19970912	20060909			-5882		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	PASTERZE	566	19640701	19810701	18.9	-650	-7200		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Tintor, W., and H. Wakonigg, 1998, Z. Gletsch.kd. Glazialgeol., 34, 161-166
AT	STUBACHER SONNBLICK K.	573	19690901	19980808			-4118		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	VERNAGT F.	489	18899999	19129999	11.5	-40	-4209		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	18899999	19129999	11.5	-30	-4900		Brunner, K., and H. Rentsch, 1972, Z. Gletsch.kd. Glazialgeol., 8, 11-25
AT	VERNAGT F.	489	19129999	19389999	10.4	-1098	-9204		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	19129999	19389999	10.5		-7600		Brunner, K., and H. Rentsch, 1972, Z. Gletsch.kd. Glazialgeol., 8, 11-25
AT	VERNAGT F.	489	19389999	19549999	9.5	-937	-6864		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
AT	VERNAGT F.	489	19389999	19699999	9.6		-9300		Brunner, K., and H. Rentsch, 1972, Z. Gletsch.kd. Glazialgeol., 8, 11-25
AT	VERNAGT F.	489	19389999	19699999	6.8		-8678		Brunner, K., and H. Rentsch, 1972, Z. Gletsch.kd. Glazialgeol., 8, 11-25
AT	VERNAGT F.	489	19549999	19699999	9.5	-8	1545		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	19690901	19970912			-3059		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	VERNAGT F.	489	19699999	19799999	9.6	116	3043		PSFG (1985): FoG 1975-1980 (Vol. IV).
AT	VERNAGT F.	489	19699999	19799999	9.4	-69	1290		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	19799999	19829999	9.4		-900		Reinhardt, W., and H. Rentsch, 1986, Ann. Glaciol., 8, 151-155
AT	VERNAGT F.	489	19799999	19909999	9	-415	-5753		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	19820701	19900824	9.2	-318	-4613		WGMS (1993): FoG 1985-1990 (Vol. VI).
AT	VERNAGT F.	489	19900824	19990701	8.7	-385	-7217	Ludwig N. Braun	Finsterwalder, Rü., and H. Rentsch, 1992, Z. Gletsch.kd. Glazialge-ol., 27/28, 165-172
AT	VERNAGT F.	489	19909999	19999999	8.7	-302	-7884		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	19970912	20060909			-12824		Fischer, A., 2011, Cryosphere, 5, 107-124, 10.5194/tc-5-107-2011
AT	VERNAGT F.	489	19999999	20039999	8.4	-250	-1520		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	20039999	20069999	8.2	-257	-3192		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	VERNAGT F.	489	20069999	20099999	7.7	-425	-3102		Mayer, C., et al., 2012, Z. Gletsch.kd. Glazialgeol., 45/46, 259-280
AT	WURTEN K.	545	18719999	19300701	3	-480	-13340		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Auer, I., et al., 1995, Oester. Beitr. Meteor. Geophys., 12, 143p
AT	WURTEN K.	545	19300701	19670701	2.3	-680	-42490		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Auer, I., et al., 1995, Oester. Beitr. Meteor. Geophys., 12, 143p
AT	WURTEN K.	545	19670701	19790701	2.1	-280	-6660		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Auer, I., et al., 1995, Oester. Beitr. Meteor. Geophys., 12, 143p
AT	WURTEN K.	545	19790701	19910701	1.3	-730	-15850		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Auer, I., et al., 1995, Oester. Beitr. Meteor. Geophys., 12, 143p
BO - Bolivia									
BO	ZONGO	1503	19560520	19630621			1000	Antoine Rabatel, Alvaro Soruco	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
BO	ZONGO	1503	19630621	19750723			4289	Antoine Rabatel, Alvaro Soruco	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
BO	ZONGO	1503	19750723	19830620			-3833	Antoine Rabatel, Alvaro Soruco	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
BO	ZONGO	1503	19830620	19970420			-9789	Antoine Rabatel, Alvaro Soruco	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
BO	ZONGO	1503	19970420	20060713			-18133	Antoine Rabatel, Alvaro Soruco	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
CA - Canada									
CA	HELM	45	19280701	19880101	1.3	-3000	-58000		Cogley 2018, GMBAL.TTN201801, based on: Koch et al. (2009): Global and Planetary Change, 66(3-4), 161-178.
CA	HELM	45	19880101	20000216	1.3	0	-11000		Cogley 2018, GMBAL.TTN201801, based on: Koch et al. (2009): Global and Planetary Change, 66(3-4), 161-178.
CA	PLACE	41	19659999	20059999			37600		Menounos, , and Schiefer, 2008, Geodetic constraints on the glacier mass balance record of Place Glacier, British Columbia, Canada. (conference abstract)
CA	WHITE	0	19600802	20140710	38.5		-10743	Laura Thomson	Thomson and Copland (2016), Journal of Maps. doi: 10.1080:17445647.2015.1124057
CA	WHITE	0	19600802	20140710	38.5	-2530	-11060		Cogley 2018, GMBAL.TTN201801, based on: Thomson et al. (2017): Journal of Glaciology, 63 (237), 55-66. doi: 10.1017/ jog.2016.112.
CH - Switzerland									
CH	ADLER	3801	20051028	20091004	2.3	-27	-1015	Philip Joerg	Joerg, P.C., et al., 2012, Remote Sens. Environ., 127, 118-129
CH	ADLER	3801	20059999	20099999	2.1	-27	-1520	Thierry Bossard	Bossard, T. (2014). Evaluation of swissALTI3D with airborne laser scanning data for applications in glaciology. Master's thesis. University of Zurich. 86 pages
CH	ADLER	3801	20091004	20100929	2.2	-8	-772	Philip Joerg	Joerg, P.C., et al., 2012, Remote Sens. Environ., 127, 118-129
CH	ALLALIN	394	19320701	19460701	10.3	-320	-2100		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	ALLALIN	394	19320815	19560915	9.9	-710	-1270		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	ALLALIN	394	19329999	19560915	9.9	-1133	-4183	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	19329999	20049999	9.7		-10998		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	ALLALIN	394	19460701	19560701	9.9	-390	-3000		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	ALLALIN	394	19560701	19670701	9.9	10	1800		PSFG (1973): FoG 1965-1970 (Vol. II).
CH	ALLALIN	394	19560915	19670715	9.9	10	-1170		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	ALLALIN	394	19560915	19670821	10	16	1814	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	19670715	19820815	9.8	-110	4410		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	ALLALIN	394	19670821	19820917	10.5	504	5134	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	19820815	19910815	9.8	-70	-7310		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	ALLALIN	394	19820917	19910910	9.8	-660	-8573	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	19889999	20099999	9.1	-1000	-11770	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	ALLALIN	394	19910815	19990815	9.7	-60	-2230		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	ALLALIN	394	19910910	19990902	9.8	-25	-2622	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	19990815	20040915	9.7	-40	-1090		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
CH	ALLALIN	394	19990902	20040907	9.7	-94	-1441	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	20040907	20080829	9.5	-218	-2439	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	ALLALIN	394	20080829	20120920	9.7	237	-3722	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19290915	19490915	2.2	0	-12090		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	19299999	19499999	2.7	-574	-17400	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19299999	20029999	2.2		-27232		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	19490915	19610915	2.2	0	-2800		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	19499999	19619999	2.4	-270	-3569	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19610915	19711015	2.2	0	4160		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	19619999	19710903	2.4	-48	4938	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19710903	19850917	2.6	199	3673	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19711015	19851015	2.2	0	2870		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	19850917	19910918	2.4	-189	-6652	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19851015	19911015	2.2	0	-5380		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	19879999	20099999	1.9	0	-19850	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	BASODINO	463	19910918	20020916	2.2	-197	-5141	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	19911015	20021015	2.2	0	-4450		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	BASODINO	463	20020916	20080829	2	-238	-8946	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	BASODINO	463	20080829	20130821	1.8	-119	-2137	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CLARIDENFIRN	2660	19360815	19851015	5.1	0	2290		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CLARIDENFIRN	2660	19369999	19560924	5.8	-355	-730	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CLARIDENFIRN	2660	19369999	20039999	5.1		-7326		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CLARIDENFIRN	2660	19560924	19790917	6	203	4263	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CLARIDENFIRN	2660	19790917	19850911	6.1	73	81	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CLARIDENFIRN	2660	19850911	19900928	5.6	-445	-5344	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CLARIDENFIRN	2660	19851015	19901015	5.1	0	-4530		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CLARIDENFIRN	2660	19900928	20030808	5.1	-513	-5075	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CLARIDENFIRN	2660	19901015	20030815	5.1	0	-4590		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CORBASSIERE	366	18779999	19350815	16	0	-8170		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CORBASSIERE	366	18779999	20039999	16		-24577		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CORBASSIERE	366	19349999	19830907	19.5	111	-5037	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CORBASSIERE	366	19350815	19980915	16	0	-10120		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CORBASSIERE	366	19830907	19980831	18.6	-940	-7257	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CORBASSIERE	366	19839999	20109999	15.1	-1000	-18870	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	CORBASSIERE	366	19980831	20030802	18.5	-44	-1455	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CORBASSIERE	366	19980915	20030815	16	0	-1450		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	CORBASSIERE	366	20030802	20080829	18.2	-313	-5382	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	CORBASSIERE	366	20080829	20130821	17.5	-684	-4484	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	FINDELEN	389	18599999	18819999	18.4	-1030	-12500	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	18819999	18909999	18.4	-30	-1840	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	18909999	19099999	18.2	-200	1830	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	19099999	19379999	18.2	10	-18730	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	19319999	19820915	19	-1772	-11950	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
CH	FINDELEN	389	19379999	19669999	17.2	-1070	-11290	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	19669999	19779999	16.8	-340	-120	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	19779999	19889999	16.9	60	-740	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	19820915	20070913	17	-2007	-17276	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	FINDELEN	389	19829999	20099999	16.2	-2000	-15740	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	FINDELEN	389	19889999	19959999	16.4	-440	350	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	19959999	20009999	15.9	-540	-4630	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	20009999	20059999	15.3	-550	-5930	P. Rastner, P.C. Joerg, M. Huss M. Zemp	Rastner et al. (2016), GPC, 145, p. 67-77. http://dx.doi.org/10.1016/j.gloplacha.2016.07.005
CH	FINDELEN	389	20051028	20091004	13.3	-231	-2368	Philip Joerg	Joerg, P.C., Morsdorf, F. and Zemp, M. (2012), Remote Sensing of Environment, 127: p. 118-129.
CH	FINDELEN	389	20059999	20099999	14.7	-199	-3100	Thierry Bossard	Bossard, T. (2014). Evaluation of swissALTI3D with airborne laser scanning data for applications in glaciology. Master's thesis. University of Zurich. 86 pages
CH	FINDELEN	389	20091004	20100929	13.1	-59	-959	Philip Joerg	Joerg, P.C., Morsdorf, F. and Zemp, M. (2012), Remote Sensing of Environment, 127: p. 118-129.
CH	GIETRO	367	19340915	19710915	5.5	0	40		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GIETRO	367	19349999	19710810	5.7	-323	76	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GIETRO	367	19349999	20039999	5.5		-12297		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GIETRO	367	19710810	19850927	5.7	33	-4738	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GIETRO	367	19710915	19851015	5.5	0	-4200		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GIETRO	367	19839999	20109999	5.2	-1000	-18280	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	GIETRO	367	19850927	19970915	5.7	20	-3915	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GIETRO	367	19851015	19971015	5.5	0	-3200		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GIETRO	367	19970915	20030802	5.5	-156	-3731	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GIETRO	367	19971015	20030915	5.5	0	-3290		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GIETRO	367	20030802	20080829	5.5	-80	-4281	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GIETRO	367	20080829	20130821	5.4	-119	-4977	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	18849999	19230915	7.9	0	-25460		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	18849999	20039999	5.3		-102475		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19230915	19611015	6.7	-1170	-25360		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19239999	19610920	6.7	-1062	-32967	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	19239999	19619999	6.7	-1167	-31540		WGMS (1998): FoG 1990-1995 (Vol. VII).
CH	GRIES	359	19610701	19790701	6.3	-350	-1800		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Funk, M., et al., 1997, Z. Gletsch. kd. Glazialgeol., 33, 41-56
CH	GRIES	359	19610920	19670901	6.4	-235	-1818	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	19611015	19670915	6.6	-120	-1930		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19619999	19799999	6.3	-353	-1800		WGMS (1998): FoG 1990-1995 (Vol. VII).
CH	GRIES	359	19670901	19790815	6.4	-60	259	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	19670915	19790815	6.3	-240	180		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19790701	19860701	6.2	-90	-2590		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Funk, M., et al., 1997, Z. Gletsch. kd. Glazialgeol., 33, 41-56
CH	GRIES	359	19790815	19860923	6.1	-284	-4111	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	19790815	19861015	6.2	-90	-3770		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19799999	19869999	6.2	-88	-2590		WGMS (1998): FoG 1990-1995 (Vol. VII).
CH	GRIES	359	19819999	20099999	4.8	-2000	-36450	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	GRIES	359	19860701	19910701	6.2	-50	-6650		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Funk, M., et al., 1997, Z. Gletsch. kd. Glazialgeol., 33, 41-56
CH	GRIES	359	19860923	19910910	5.8	-280	-6699	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	19861015	19911015	6.2	-50	-6120		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19869999	19919999	6.2	-55	-6650		WGMS (1998): FoG 1990-1995 (Vol. VII).
CH	GRIES	359	19910910	19980831	5.8	-29	-6732	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
CH	GRIES	359	19911015	19980915	5.7	-540	-6130		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	19980831	20030823	5.3	-505	-4148	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	19980915	20030915	5.3	-390	-5050		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	GRIES	359	20030823	20070912	5	-295	-6267	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	GRIES	359	20039999	20079999			-2106		WGMS (2012): FoG 2005-2010 (Vol. X).
CH	GRIES	359	20070912	20120827	5.1	169	-7221	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	18799999	19320701	2.9	0	-12270		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	18799999	19560915	2.5	-400	-20910		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	18799999	20049999	2.3		-38843		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	19320701	19460701	2.8	-130	-2940		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	HOHLAUB	3332	19329999	19560915	2.4	-566	-8883	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	19460701	19560701	2.5	-270	-5700		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	HOHLAUB	3332	19560701	19670701	2.5	20	100		PSFG (1973): FoG 1965-1970 (Vol. II).
CH	HOHLAUB	3332	19560915	19670815	2.5	20	-10		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	19560915	19670821	2.4	5	367	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	19670815	19821015	2.4	-70	3860		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	19670821	19820917	2.5	79	4381	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	19820917	19910910	2.4	-97	-8551	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	19821015	19911015	2.3	-100	-7630		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	19910910	19990902	2.4	7	-2295	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	19911015	19991015	2.3	-60	-2000		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	19990902	20040907	2.3	-159	-2571	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	19991015	20041015	2.3	-30	-2420		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	HOHLAUB	3332	20040907	20080829	2.2	-71	-2394	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	HOHLAUB	3332	20080829	20120920	2.1	-42	-4488	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	MURTEL VADRET DAL	4339	19919999	20099999	0.3	0	-23520	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	PIZOL	417	19619999	20089999	0.1	0	-11900	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	PIZOL	417	19681018	19730810	0.2	-67	-2316	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	PIZOL	417	19730810	19790919	0.2	14	490	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	PIZOL	417	19790919	19850912	0.2	22	2705	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	PIZOL	417	19850912	19900803	0.2	-20	-2162	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	PIZOL	417	19900803	19970915	0.1	-64	-4692	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	PIZOL	417	19970915	20060905	0.1	-51	-4689	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	PLAINE MORTE, GLACIER DE LA	4630	19859999	20109999	7.3	-1797	-32277	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	RHONE	473	18749999	20009999	16.5		-35104		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	RHONE	473	18789999	19290915	16.5	0	-11070		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	RHONE	473	18789999	19690701	18.4	-4370	-21500		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Chen, J., and M. Funk, 1990, J. Glaciol., 36, 199-209, 10.3198/1990JoG36-123-199-209
CH	RHONE	473	18829999	19699999	18.4	-4370	-20000		
CH	RHONE	473	19290915	19590915	16.5	0	-9300		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	RHONE	473	19299999	19590903	17.1	-1097	-10566	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	RHONE	473	19590903	19800915	17.3	179	3551	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	RHONE	473	19590915	19801015	16.5	0	2780		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	RHONE	473	19800915	19910910	16.8	-566	-8790	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	RHONE	473	19801015	19911015	16.5	0	-7880		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	RHONE	473	19869999	20109999	15.3	-2000	-20810	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
CH	RHONE	473	19910910	20000824	16.5	-307	-3920	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	RHONE	473	19911015	20000915	16.5	0	-3730		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	RHONE	473	20000824	20070912	15.9	-517	-6750	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SANKT ANNA	432	19869999	20109999	0.2	0	-22520	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	SCHWARZBACH	4340	19909999	20109999	0.1	0	-26130	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	SCHWARZBERG	395	18799999	19320701	7.4	0	-5030		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	18799999	19560915	6.5	-950	-11370		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	18799999	20049999	5.3		-23248		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	19320701	19460701	7	-420	-1540		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	SCHWARZBERG	395	19321006	19560915	5.6	-1763	-8739	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	19460701	19560701	6.5	-530	-4800		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	SCHWARZBERG	395	19560701	19670701	6.3	-160	-300		PSFG (1973): FoG 1965-1970 (Vol. II).
CH	SCHWARZBERG	395	19560915	19670821	5.5	-107	-986	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	19560915	19670915	6.3	-160	-1020		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	19670821	19820917	6.2	759	6452	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	19670915	19821015	5.9	-390	5190		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	19820917	19910910	5.5	-711	-6171	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	19821015	19911015	5.7	-230	-5850		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	19829999	20099999	5.2	0	-20650	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	SCHWARZBERG	395	19910910	19990902	5.5	-25	-3338	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	19911015	19990915	5.5	-210	-3210		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	19990902	20040907	5.3	-164	-3131	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	19990915	20041015	5.3	-130	-3100		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SCHWARZBERG	395	20040907	20080829	5.3	-27	-3976	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SCHWARZBERG	395	20059999	20099999	5.8	-165	-4630	Thierry Bossard	Bossard, T. (2014). Evaluation of swissALTI3D with airborne laser scanning data for applications in glaciology. Master's thesis. University of Zurich. 86 pages
CH	SCHWARZBERG	395	20080829	20120920	5.2	-130	-3887	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SEX ROUGE	454	19619999	20109999	0.3	0	-16140	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	SILVRETTA	408	18939999	19380915	3.7	0	-5810		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SILVRETTA	408	18939999	20039999	2.9		-27778		Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SILVRETTA	408	19380701	19560701	3.3	-400	-9200		PSFG (1967): FoG 1959-1965 (Vol. I).
CH	SILVRETTA	408	19380915	19590815	3.2	-510	-7210		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Bauder, A., et al., 2007, Ann. Glaciol., 46, 145-149, 10.3189/172756407782871701
CH	SILVRETTA	408	19389999	19590831	3.2	-329	-8890	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SILVRETTA	408	19590831	19730912	3.1	-81	-1555	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SILVRETTA	408	19599999	19739999			-1285		
CH	SILVRETTA	408	19730912	19860929	3.1	-8	3097	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SILVRETTA	408	19739999	19869999			3518		
CH	SILVRETTA	408	19859999	20089999	2.7	-1000	-16200	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CH	SILVRETTA	408	19860929	19940823	3	-129	-6408	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SILVRETTA	408	19869999	19949999			-8038		
CH	SILVRETTA	408	19940823	20030813	2.9	-117	-4487	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SILVRETTA	408	19949999	20039999			-6109		
CH	SILVRETTA	408	20030813	20070924	2.8	-107	-4632	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	SILVRETTA	408	20039999	20079999			-4856		WGMS (2012): FoG 2005-2010 (Vol. X).
CH	SILVRETTA	408	20070924	20120820	2.7	-76	-5312	Andreas Bauder	Bauder, A. (Ed.), The Swiss Glaciers 2011/2012 and 2012/2013, Glac. Rep. No. 133/134, EKK of SCNAT, 2016
CH	TSANFLEURON	371	19749999	20109999	2.6	-1000	-33000	Fischer et al.	Fischer, Huss, and Hoelzle (2015): The Cryosphere, 9, 525-540, https://doi.org/10.5194/tc-9-525-2015.
CL - Chile									
CL	AMARILLO	3905	20000216	20120312	0.4		-437	Thorsten Seehaus	Braun et al. 2019; Nature Climate Change 9,130-136, DOI:10.1038/s41558-018-0375-7
CL	AMARILLO	3905	20000399	20180499	0.4		-5162	Ines Dussaillant	Dussaillant et al. (2019); Nature Geoscience 12, 802–808, doi: 10.1038/s41561-019-0432-5.
CL	AMARILLO	3905	20140305	20150399	0.2	-13	-1548	Gabriel Cabrera	WGMS (2017): GGCB No. 2 (2014-2015).

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
CL	ECHAURREN NORTE	1344	20000216	20120226	0.3		-5905	Thorsten Seehaus	Braun et al. 2019; Nature Climate Change 9,130-136, DOI:10.1038/s41558-018-0375-7
CL	ECHAURREN NORTE	1344	20000399	20180499	0.3		-12177	Ines Dussaillant	Dussaillant et al. (2019); Nature Geoscience 12, 802–808, doi: 10.1038/s41561-019-0432-5.
CN - China									
CN	PARLUNG NO. 94	3987	20009999	20169999			-20360	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
CN	URUMQI GLACIER NO. 1	853	20060824	20150911	1		-5455	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
CO - Colombia									
CO	CONEJERAS	2721	19879999	20059999			-51200		Rabatel et al. (2017), Geografiska Annaler, Series A, Physical Geography, p.75-95, doi: 10.1080/04353676.2017.1383015.
CO	CONEJERAS	2721	20059999	20140123	0.2		-24600		Rabatel et al. (2017), Geografiska Annaler, Series A, Physical Geography, p.75-95, doi: 10.1080/04353676.2017.1383015.
CO	CONEJERAS	2721	20060403	20070101	0.2		-2656	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20070101	20080101	0.2	-3909	-1624	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20080101	20090101	0.2	-3822	-539	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20091299	20100101	0.2	-3903	-3452	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20100101	20110101	0.2	-4362	-3982	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20110101	20120101	0.2	-4362	-1080	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20120101	20130101	0.2	-381	-2536	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20130101	20140101	0.2	-616	-4027	Jorge Luis Ceballos	
CO	CONEJERAS	2721	20140101	20150101	0.2	-517	-4539	Jorge Luis Ceballos	WGMS (2017): GGCB No. 2 (2014-2015).
CO	CONEJERAS	2721	20150101	20160101	0.2	-110	-6211	Jorge Luis Ceballos	WGMS (2017): GGCB No. 2 (2014-2015).
CO	CONEJERAS	2721	20160101	20170101	0.2		-6200	Jorge Luis Ceballos, Francisco Rojas	
CO	CONEJERAS	2721	20160301	20170122	0.1	-13522	-4479	Jorge Luis Ceballos, Alejandro Ospina	
CO	RITACUBA BLANCO	2763	20090101	20100101	0.4	0	-961	Jorge Luis Ceballos	
CO	RITACUBA BLANCO	2763	20100101	20110101	0.4	0	-635	Jorge Luis Ceballos	
CO	RITACUBA BLANCO	2763	20110101	20120101	0.4	0	-71	Jorge Luis Ceballos	
CO	RITACUBA BLANCO	2763	20120101	20130101	0.4	0	1215	Jorge Luis Ceballos	
CO	RITACUBA BLANCO	2763	20130114	20140217	0.4	0	-901	Jorge Luis Ceballos, Francisco Rojas	
CO	RITACUBA BLANCO	2763	20140217	20150302	0.4	0	-519	Jorge Luis Ceballos, Francisco Rojas	
CO	RITACUBA BLANCO	2763	20150302	20160223	0.4	0	-527	Jorge Luis Ceballos, Francisco Rojas	
CO	RITACUBA BLANCO	2763	20160223	20170213	0.4	0	-966	Jorge Luis Ceballos, Francisco Rojas	
CO	RITACUBA BLANCO	2763	20170213	20180214	0.4	0	364	Jorge Luis Ceballos, Francisco Rojas	
EC - Ecuador									
EC	ANTIZANA15ALPHA	1624	19569999	19659999	0.4	-26	-2550	Bolívar Cáceres, Antoine Rabatel	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
EC	ANTIZANA15ALPHA	1624	19659999	19939999	0.4	-64	-4550	Bolívar Cáceres, Antoine Rabatel	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
EC	ANTIZANA15ALPHA	1624	19939999	19979999	0.3	-35	-2670	Bolívar Cáceres, Antoine Rabatel	Rabatel, A., and {27 others}, 2013, Cryosphere, 7, 81-102, 10.5194/tc-7-81-2013
EC	ANTIZANA15ALPHA	1624	19970803	20090913	0.3	50	-2211		Basantes-Serano et al. (2016), J. Glaciol., 62 (231), p. 124-136, doi: doi: 10.1017/jog.2016.17
ES - Spain									
ES	MALADETA	942	19810915	19990915	0.4	-40	-5440		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Chueca, J., et al., 2007, J. Glaciol., 53, 547-557, 10.3189/002214307784409342
ES	MALADETA	942	19940818	20010913	0.4	-41	-7409	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20010913	20020927	0.4	-11	-1475	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20020927	20030918	0.4	-11	-2692	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20030918	20040831	0.3	-10	-2045	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20040831	20050902	0.3	-17	-2860	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20050902	20060917	0.3	-15	-2939	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20060917	20071022	0.3	-37	-1702	Guillermo Cobos Campos	WGMS (2012): FoG 2005-2010 (Vol. X).
ES	MALADETA	942	20160928	20181004	0.4		-801	Guillermo Cobos Campos	
ES	MALADETA	942	20181004	20191025	0.4		-910	Guillermo Cobos Campos	
FR - France									
FR	ARGENTIERE	354	19799999	20039999	13.5		-365	Berthier, E.	Berthier, Dynamique et bilan de masse des glaciers de montagne (Alpes, Islande, Himalaya), Contribution de l'imagerie satellitaire, 2005
FR	ARGENTIERE	354	20030820	20120899			-1318	Berthier, E.	Berthier et al (2014), Glacier topography and elevation changes derived from Pléiades sub-meter stereo images, The Cryosphere, 8, doi:10.5194/tc-8-2275-2014
FR	SARENNES	357	19520801	20030920			-35889		Thibert, E., et al., 2008, J. Glaciol., 54, 522-532, 10.3189/002214308785837093
FR	SARENNES	357	19529999	19819999			-24222		Eckert, N., et al., 2011, J. Glaciol., 57, 134-150, 10.3189/002214311795306673
FR	SARENNES	357	19819999	19919999	0.5		-3000		Valla, F., and C. Piedallu, 1997, Ann. Glaciol., 24, 361-366
FR	SARENNES	357	19819999	20030920			-11666		Eckert, N., et al., 2011, J. Glaciol., 57, 134-150, 10.3189/002214311795306673
GL - Greenland									
GL	MITTIVAKKAT	1629	19949999	20129999	15.8	-1800	-25000	Jakob Yde	Yde et al., J. Glaciol. (2014)
GL	MITTIVAKKAT	1629	19949999	20129999	15.8	-1800	-34731		Yde et al. (2014), J. Glaciol., 60 (224), p. 1199-1207, doi: 10.3189/2014JoG14J047.
IN - India									
IN	BARA SHIGRI	2920	20000215	20041112	131.1		-7382	Etienne Berthier & Yves Arnaud	WGMS (2008): FoG 2000-2005 (Vol. IX).
IN	BARA SHIGRI	2920	20000299	20120299	112.4		-9729	Saurabh Vijay and Matthias Braun	Vijay S. and Braun M. (2016); Remote Sensing, 8, 1038
IN	BARA SHIGRI	2920	20009999	20169999			-7482	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
IN	BATAL	7182	20000299	20120299	4.1		-6228	Saurabh Vijay and Matthias Braun	Vijay S. and Braun M. (2016); Remote Sensing, 8, 1038

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
IN	BATAL	7182	20009999	20169999			-6861	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
IN	CHHOTA SHIGRI	2921	19889999	20109999	15.5		-4110		Vincent et al. (2013), The Cryosphere, 7, 569-582, https://doi. org/10.5194/tc-7-569-2013.
IN	CHHOTA SHIGRI	2921	19889999	20109999	15.5		-4387	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel J. S.	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel, J. S. (2018), J. Glaciol. 64(243), pp. 61-74.
IN	CHHOTA SHIGRI	2921	19999999	20109999	15.5		-5677	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel J. S.	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel, J. S. (2018), J. Glaciol. 64(243), pp. 61-74.
IN	CHHOTA SHIGRI	2921	19999999	20109999	15.5		-5319		Vincent et al. (2013), The Cryosphere, 7, 569-582, https://doi. org/10.5194/tc-7-569-2013.
IN	CHHOTA SHIGRI	2921	20000299	20120299	16.8		-9365	Saurabh Vijay and Matthias Braun	Vijay S. and Braun M. (2016); Remote Sensing, 8, 1038
IN	CHHOTA SHIGRI	2921	20009999	20169999			-4616	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
IN	CHHOTA SHIGRI	2921	20029999	20109999	16.9		-579		Azam, M.F., et al., 2012, J. Glaciol., 58, 315-324, 10.3189/2012JoG11J123
IN	CHHOTA SHIGRI	2921	20059999	20149999	15.5		-3857		Azam et al. (2016), Ann. Glaciol., 57 (71), 328-338, doi: 10.3189/2016AoG71A570.
IN	CHHOTA SHIGRI	2921	20059999	20149999	15.5		-4117	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel J. S.	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel, J. S. (2018), J. Glaciol. 64(243), pp. 61-74.
IN	PENSILUNGPA (GLACIER NO. 10)	3655	20009999	20169999			-11392	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
IN	SAMUDRA TAPU	3635	20000299	20120299	80.8		-10084	Saurabh Vijay and Matthias Braun	Vijay S. and Braun M. (2016); Remote Sensing, 8, 1038
IN	SAMUDRA TAPU	3635	20009999	20169999			-12704	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
IS - Iceland									
IS	BRUARJOKULL	3067	20101001	20150930	1528		-1832	Noel Gourmelen	Foresta, L., et al. (2016), Geophys. Res. Lett., 43, doi:10.1002/2016GL071485
IS	HOFSJOKULL E	3088	19860899	19990899	226.6	-7000	-4090	Thorstein Thorsteinsson	
IS	HOFSJOKULL E	3088	19990899	20040899	222.4	-4200	-9210	Thorstein Thorsteinsson	
IS	HOFSJOKULL E	3088	20040899	20080903	217.9	-4500	-5370	Thorstein Thorsteinsson	
IS	HOFSJOKULL E	3088	20080903	20131013	212.5	-5400	-7980	Thorstein Thorsteinsson	
IS	HOFSJOKULL SW	3090	20040814	20141103	68.1		-10823	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
IS	LANGJOKULL ICE CAP	3660	19970499	20040899	904		-12810		Pope et al. (2016); Journal of Glaciology, 62(233), 497-511.
IS	LANGJOKULL ICE CAP	3660	20040899	20070899	904		-1230		Pope et al. (2016); Journal of Glaciology, 62(233), 497-511.
IS	LANGJOKULL ICE CAP	3660	20101001	20150930	957		-4023	Noel Gourmelen	Foresta, L., et al. (2016), Geophys. Res. Lett., 43, doi:10.1002/2016GL071485
IT - Italy									
IT	CAMPO SETT.	1106	20050905	20070921	0.3		-4471	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	CAMPO SETT.	1106	20070921	20090906			-2230	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	CARESER	635	19679999	19809999	4.8	147	-3040		WGMS (1988): FoG 1980-1985 (Vol. V).
IT	CARESER	635	19679999	19901001	3.9	-864	-13760		Giada, M., and G. Zanon, 1995, Z. Gletsch.kd. Glazialgeol., 31, 143-147
IT	CARESER	635	19809999	19909999	3.9	-973	-11235		WGMS (1993): FoG 1985-1990 (Vol. VI).
IT	CARESER	635	19901015	19970701	3.4	-490	-7750	M. Giada and G. Zanon	WGMS (2005): FoG 1995-2000 (Vol. VIII).
IT	CARESER	635	19970701	20000701	3	-340	-7080	M. Giada and G. Zanon	WGMS (2005): FoG 1995-2000 (Vol. VIII).
IT	LUPO	1138	20081005	20090922	0.2		704	Riccardo Scotti, Fabio Villa	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	LUPO	1138	20090922	20100922			408	Riccardo Scotti, Fabio Villa	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20010825	20020831			-611	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20020831	20030920	0.2		-3053	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20030920	20040905			-567	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20040905	20050903			-1298	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20050903	20060910			-2707	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20060910	20071013	0.2	-18	-2911	Andrea Tamburini	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20071013	20081001			-382	Fabio Villa, Riccardo Scotti	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20081001	20090920			-778	Fabio Villa, Riccardo Scotti	WGMS (2012): FoG 2005-2010 (Vol. X).
IT	SURETTA MERID.	2488	20090920	20111001			-2017	Fabio Villa, Livio Ruvo, Riccar-do Scotti	WGMS (2015): GGCB No. 1 (2012-2013).
IT	SURETTA MERID.	2488	20111001	20120922			-1538	Fabio Villa, Livio Ruvo, Riccar-do Scotti	WGMS (2015): GGCB No. 1 (2012-2013).
KG - Kyrgyzstan									
KG	ABRAMOV	732	19750712	20150901	24.4	-2170	-17200	Florian Denzinger	Denzinger et al. (2021), J. Glaciol., 1-12, https://doi.org/10.1017/ jog.2020.108.
KG	ABRAMOV	732	20009999	20169999			-6728	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
KG	ABRAMOV	732	20041004	20121010	21.3		-5750	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	ABRAMOV	732	20041004	20160919	21.3		-5550	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	ABRAMOV	732	20041004	20161005	21.3		-6618	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	ABRAMOV	732	20050921	20161005	21.3		-3919	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	BORDU	829	20009999	20169999			-4367	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
KG	BORDU	829	20009999	20169999			-6818	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/ NGEO2999.
KG	BORDU	829	20021003	20120928	5.6		-8300	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	BORDU	829	20030819	20120928	5.6		-8842	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	19641118	19730731			-471		Goerlich et al. (2017); Remote Sensing, 9(3), 275.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	19641118	19800821			-5176		Goerlich et al. (2017); Remote Sensing, 9(3), 275.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	19730731	19800821			-7059		Goerlich et al. (2017); Remote Sensing, 9(3), 275.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	19730731	20000211			-22306		Pieczonka and Bolch (2015); Global and Planetary Change, 128, 1-13.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	20009999	20169999			-8604	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	20021003	20120928	6.5		-9263	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	20030819	20120928	6.5		-11131	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	20031010	20120939	6.3		-4480	Andreas Kääb, Marlene Kronenberg, Martin Hoelzle	Kronenberg, M., et al., 2016, Ann. Glaciol., 57, 92-102, 10.3189/2016AoG71A032
KG	GLACIER NO. 354 (AK-SHIYRAK)	3889	20050621	20131010	6.5		-6191	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	GOLUBIN	753	19649999	19999999	5.1	-500	-23100	Tobias Bolch	Bolch, T., 2015, Led i Sneg, 129, 28-39, 10.15356/IS.2015.01.03
KG	GOLUBIN	753	19999999	20129999			-2300	Tobias Bolch	Bolch, T., 2015, Led i Sneg, 129, 28-39, 10.15356/IS.2015.01.03
KG	GOLUBIN	753	20009999	20169999			-796	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
KG	GOLUBIN	753	20020627	20120910	4.8		-7577	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	KARA-BATKAK	813	19730731	20000211			-15247		Pieczonka and Bolch (2015); Global and Planetary Change, 128, 1-13.
KG	KARA-BATKAK	813	20009999	20169999			-7268	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
KG	KARA-BATKAK	813	20030819	20120928	2		5941	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	SARY TOR (NO.356)	805	19430701	19770701	3.5	-80	-19400		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kuz'michenok, V.A., 1988, Mater. Glyatsol. Issled., 62, 193-198
KG	SARY TOR (NO.356)	805	19641118	19730731			-6118		Goerlich et al. (2017); Remote Sensing, 9(3), 275.
KG	SARY TOR (NO.356)	805	19641118	19800821			-4941		Goerlich et al. (2017); Remote Sensing, 9(3), 275.
KG	SARY TOR (NO.356)	805	19730731	19800821			-706		Goerlich et al. (2017); Remote Sensing, 9(3), 275.
KG	SARY TOR (NO.356)	805	19730731	20000211			-14400		Pieczonka and Bolch (2015); Global and Planetary Change, 128, 1-13.
KG	SARY TOR (NO.356)	805	20009999	20169999			-7665	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
KG	SARY TOR (NO.356)	805	20021003	20120928	2.9		-5532	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	SARY TOR (NO.356)	805	20030819	20120928	2.9		-7051	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KG	TURGEN-AKSUU	13057	20009999	20169999			-9673	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
KG	TURGEN-AKSUU	13057	20021003	20120928	6.3		-5909	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
KZ - Kazakhstan									
KZ	TS.TUYUKSUYSKIY	817	19580701	19980701	2.6	-470	-14610		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Hagg, W.J., et al., 2004, J. Glaciol., 50, 505-510, 10.3189/172756504781829783
KZ	TS.TUYUKSUYSKIY	817	19710917	19990930			-13341	Fabienne Maag	Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
KZ	TS.TUYUKSUYSKIY	817	19710917	20160827			-15935	Fabienne Maag	Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
KZ	TS.TUYUKSUYSKIY	817	19719999	19999999			-13835	Tino Pieczonka	Pieczonka et al. (2013), in: Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
KZ	TS.TUYUKSUYSKIY	817	19799999	20129999			-13588	Tino Pieczonka	Pieczonka et al. (2013), in: Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
KZ	TS.TUYUKSUYSKIY	817	19909999	19919999	2.7		-883	K.G.Makarevich	
KZ	TS.TUYUKSUYSKIY	817	19919999	19929999	2.7		-448	K.G.Makarevich	
KZ	TS.TUYUKSUYSKIY	817	19929999	19939999	2.7		572	K.G.Makarevich	
KZ	TS.TUYUKSUYSKIY	817	19959999	19969999	2.6	-32	-700	P.A.Cherkasov	WGMS (2005): FoG 1995-2000 (Vol. VIII).
KZ	TS.TUYUKSUYSKIY	817	19969999	19979999	2.6	-27	-2020	P.A.Cherkasov	WGMS (2005): FoG 1995-2000 (Vol. VIII).
KZ	TS.TUYUKSUYSKIY	817	19979999	19989999	2.6	-17	-830	P.A.Cherkasov	WGMS (2005): FoG 1995-2000 (Vol. VIII).
KZ	TS.TUYUKSUYSKIY	817	19989999	19999999	2.6	-7	-390	P.A.Cherkasov	WGMS (2005): FoG 1995-2000 (Vol. VIII).
KZ	TS.TUYUKSUYSKIY	817	19990930	20120809			-4145	Fabienne Maag	Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
KZ	TS.TUYUKSUYSKIY	817	19999999	20009999	2.5	-6	-380	P.A.Cherkasov	WGMS (2005): FoG 1995-2000 (Vol. VIII).
KZ	TS.TUYUKSUYSKIY	817	19999999	20129999			-3518	Tino Pieczonka	Pieczonka et al. (2013), in: Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
KZ	TS.TUYUKSUYSKIY	817	20009999	20169999			-3706	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
KZ	TS.TUYUKSUYSKIY	817	20120809	20160827			-3021	Fabienne Maag	Maag, F. (2017), MSc thesis, Dept. Geography, University of Zurich, Switzerland, 112 pp.
NO - Norway									
NO	AALFOTBREEN	317	19680805	19880907	4.2	-310	-3813	Bjarne Kjøllmoen	Andreassen et al. 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	AALFOTBREEN	317	19680815	19880907	4.4	-370	-6400		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Oestrem and Haakensen, 1999, Geogr. Ann., 81A, 703-711, 10.1111/j.0435-3676.1999.00098.x
NO	AALFOTBREEN	317	19680825	20100902	4	-510	-10700	Bjarne Kjøllmoen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	AALFOTBREEN	317	19880907	19970814	4.5	304	9556	Bjarne Kjøllmoen	Andreassen et al. 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	AALFOTBREEN	317	19970814	20100902	4	-504	-15823	Bjarne Kjøllmoen	Andreassen et al. 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	AALFOTBREEN	317	20060821	20140922	4		-11006	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	AUSTDALSBREEN	321	19660721	20091017	10.6	-1230	-17400	Hallgeir Elvehøy	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	AUSTDALSBREEN	321	19880810	20091017	10.6	-668	-8890	Hallgeir Elvehøy	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	ENGABREEN	298	19680825	19850819			-2333		Haug, T., et al., 2009, Ann. Glaciol., 50, 119-125, 10.3189/172756409787769528
NO	ENGABREEN	298	19680825	20010924	37.3	-268	-1270	Hallgeir Elvehøy	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	ENGABREEN	298	19680825	20160816	36.3	-1260	-9800	Hallgeir Elvehøy	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	ENGABREEN	298	19850819	20020820	40		-333		Haug, T., et al., 2009, Ann. Glaciol., 50, 119-125, 10.3189/172756409787769528
NO	ENGABREEN	298	20010924	20020823			-600		Geist, T., et al., 2005, Ann. Glaciol., 42, 195-201, 10.3189/172756405781812592

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
NO	ENGABREEN	298	20010924	20080902	36.8	-420	-3690	Hallgeir Elvehøy	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	GRAASUBREEN	299	19660721	20091017	2.1	-560	-9700	Liss M. Andreassen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	GRAASUBREEN	299	19680827	19840823			-3889		Andreassen, L.M., et al., 2002, Ann. Glaciol., 34, 343-348, 10.3189/172756402781817626
NO	GRAASUBREEN	299	19840823	19970808	2.3	-1	-323	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	GRAASUBREEN	299	19970808	20091017	2.1	-130	-7050	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	GRAASUBREEN	299	20030301	20160608	2.2		-2483	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	GRAASUBREEN	299	20030420	20160608	2.2		-5470	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	19680825	20100902	2.8	-670	-14800	Bjarne Kjøllmoen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	HANSEBREEN	322	19880907	19970814	3.2	113	6869	Bjarne Kjøllmoen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	HANSEBREEN	322	19970814	20100902	2.8	-429	-19705	Bjarne Kjøllmoen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	HANSEBREEN	322	20010419	20140829	2.9		-19697	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20010419	20150823	2.9		-20404	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20030425	20140829	2.9		-19830	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20030425	20150823	2.9		-19372	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20040808	20140708	2.9		-12426	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20040808	20140829	2.9		-14969	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20040808	20140922	2.9		-18353	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20040808	20150823	2.9		-13073	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20060316	20140829	2.9		-12507	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20060316	20150823	2.9		-10685	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HANSEBREEN	322	20080420	20160816	2.9		-2277	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HELLSTUGUBREEN	300	19660721	20091017	2.9	-450	-15800	Liss M. Andreassen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	HELLSTUGUBREEN	300	19680827	19800926	3.1	-279	-5928	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	HELLSTUGUBREEN	300	19680827	19800928	3.1	-400	-6440		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Andreassen, L.M., et al., 2002, Ann. Glaciol., 34, 343-348, 10.3189/172756402781817626
NO	HELLSTUGUBREEN	300	19800926	19970808	3	-32	-262	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	HELLSTUGUBREEN	300	19800928	19970808	3	0	-2220		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Andreassen, L.M., et al., 2002, Ann. Glaciol., 34, 343-348, 10.3189/172756402781817626
NO	HELLSTUGUBREEN	300	19970808	20091017	2.9	-147	-8757	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	HELLSTUGUBREEN	300	20000822	20090621	2.8		-4543	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HELLSTUGUBREEN	300	20000822	20170720	2.8		-11784	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HELLSTUGUBREEN	300	20030301	20160608	2.8		-7787	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HELLSTUGUBREEN	300	20030420	20160608	2.8		-6110	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	HELLSTUGUBREEN	300	20090621	20170720	2.8		-4955	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	LANGFJORDJOEKELEN	323	19660701	19940801	3.7	-600	-23330		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Andreassen, L.M., et al., 2012, J. Glaciol., 58, 581-593, 10.3189/2012JoG11J014
NO	LANGFJORDJOEKELEN	323	19660701	19940801	4.7	-800	-8720		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Andreassen, L.M., et al., 2012, J. Glaciol., 58, 581-593, 10.3189/2012JoG11J014
NO	LANGFJORDJOEKELEN	323	19660711	20080909	3.3	-1160	-43000	Liss M. Andreassen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	LANGFJORDJOEKELEN	323	19940801	20080902	3.2	-410	-21000	Liss M. Andreassen & Bjarne Kjøllmoen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	LANGFJORDJOEKELEN	323	20040508	20120917	3.5		-11331	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	LANGFJORDJOEKELEN	323	20040508	20130302	3.5		-7250	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	LANGFJORDJOEKELEN	323	20040508	20150522	3.5		-10575	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	LANGFJORDJOEKELEN	323	20040508	20150822	3.5		-12318	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	LANGFJORDJOEKELEN	323	20040508	20160630	3.5		-10054	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	LANGFJORDJOEKELEN	323	20040508	20170624	3.5		-13858	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	NIGARDSBREEN	290	19640902	19840810	48.9	550	3650	Bjarne Kjøllmoen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	NIGARDSBREEN	290	19640902	20130910	46.6	-1700	-2200	Bjarne Kjøllmoen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	NIGARDSBREEN	290	19840810	20130910	46.6	-2250	-5754	Bjarne Kjøllmoen & Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	NIGARDSBREEN	290	20040303	20130927	41.9		-7298	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	NIGARDSBREEN	290	20040303	20140914	41.9		-3940	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
NO	NIGARDSBREEN	290	20040303	20161005	41.9		-4968	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	NIGARDSBREEN	290	20040810	20130927	41.9		-8381	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	NIGARDSBREEN	290	20040810	20140914	41.9		-5273	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	NIGARDSBREEN	290	20040810	20161005	41.9		-6310	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	NIGARDSBREEN	290	20070328	20161005	41.9		-7308	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	REMBESDALSKAAKA	2296	19610831	19950831	17.6	21	7180	Hallgeir Elvehøy & Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	REMBESDALSKAAKA	2296	19610831	20100930	17.3	-310	-5600	Liss M. Andreassen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	REMBESDALSKAAKA	2296	19950831	20100930	17.3	-374	-13040	Hallgeir Elvehøy & Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	STORBREEN	302	19409999	19519999	5.7	-210	-6000		Andreassen, L.M., 1999, Geogr. Ann., 81A, 467-476, 10.1111/j.0435-3676.1999.00076.x
NO	STORBREEN	302	19519999	19689999	5.6	-130	-1667		Andreassen, L.M., 1999, Geogr. Ann., 81A, 467-476, 10.1111/j.0435-3676.1999.00076.x
NO	STORBREEN	302	19660719	20091017	5.2	-460	-9700	Liss M. Andreassen	Andreassen et al. (2020), Journal of Glaciology, 1–16. https://doi.org/10.1017/jog.2020.10
NO	STORBREEN	302	19680827	19840824	5.3	-256	-6028	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	STORBREEN	302	19689999	19849999	5.4	-250	-7111		Andreassen, L.M., 1999, Geogr. Ann., 81A, 467-476, 10.1111/j.0435-3676.1999.00076.x
NO	STORBREEN	302	19840824	19970808	5.4	9	3839	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	STORBREEN	302	19970808	20091017	5.1	-215	-7936	Liss M. Andreassen	Andreassen et al., 2016, The Cryosphere, 10, 535-552, doi:10.5194/tc-10-535-2016.
NO	STORBREEN	302	20000822	20140916	5.2		-14660	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20000822	20160919	5.2		-15467	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20000822	20161005	5.2		-12657	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20000822	20170720	5.2		-10640	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20000822	20170722	5.2		-10287	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20030301	20150929	5.2		-10790	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20030420	20150929	5.2		-9737	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20070328	20160919	5.2		-11018	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20070328	20161005	5.2		-7092	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20070328	20170722	5.2		-4130	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NO	STORBREEN	302	20090621	20170720	5.2		-4578	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NP - Nepal									
NP	MERA	3996	20000299	20110104	1.4		2219		Gardelle, J., et al., 2013, Cryosphere, 7, 1263-1286, 10.5194/tc-7-1263-2013
NP	MERA	3996	20121125	20181028	4.8	-223	-3000	Fanny Brun	Wagnon et al. (2020), J. Glaciol, 1–9. https://doi.org/10.1017/jog.2020.88
NP	RIKHA SAMBA	1516	19749999	19949999	4.6		-629		Fujita, K., and T. Nuimura, 2011, Proc. Natl. Acad. Sci. U.S.A., 108, 14011-14014, 10.1073/pnas.1106242108
NP	RIKHA SAMBA	1516	19749999	20109999	4.6		-19424	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel J. S.	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel, J. S. (2018), J. Glaciol. 64(243), pp. 61-74.
NP	RIKHA SAMBA	1516	19991099	20100599	4.6		-4790	Koji Fujita	Fujita, K., and T. Nuimura, 2011, Proc. Natl. Acad. Sci. U.S.A., 108, 14011-14014, 10.1073/pnas.1106242108
NP	RIKHA SAMBA	1516	20009999	20169999			-7017	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
NP	WEST CHANGRI NUP	10401	20000299	20110104	12.5		-6998		Gardelle, J., et al., 2013, Cryosphere, 7, 1263-1286, 10.5194/tc-7-1263-2013
NP	WEST CHANGRI NUP	10401	20009999	20169999			-8826	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
NP	WEST CHANGRI NUP	10401	20091028	20151122	0.9	-70	-7910		Sherpa et al. (2017, subm.), J. Glaciol.
NP	YALA	912	19821099	19961099	1.9		-754		Fujita, K., and T. Nuimura, 2011, Proc. Natl. Acad. Sci. U.S.A., 108, 14011-14014, 10.1073/pnas.1106242108
NP	YALA	912	19829999	19949999			-3720	DR. K. FUJITA	WGMS (2005): FoG 1995-2000 (Vol. VIII).
NP	YALA	912	19839999	20099999	1.9		-17688	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel J. S.	Azam, M. F., Wagnon, P., Berthier, E., Vincent, C., Fujita, K. and Kargel, J. S. (2018), J. Glaciol. 64(243), pp. 61-74.
NP	YALA	912	19961099	20091199	1.9		-10400	Koji Fujita	WGMS (2012): FoG 2005-2010 (Vol. X).
NP	YALA	912	20000299	20120115	1.6	-17	-10490	Sharad Joshi	WGMS (2015): GGCB No. 1 (2012-2013).
NP	YALA	912	20009999	20169999			-8911	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
NZ - New Zealand									
NZ	BREWSTER	1597	20001216	20090321	2.7		-11391	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
NZ	BREWSTER	1597	20020403	20121210	2.7		7175	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
PE - Peru									
PE	YANAMAREY	226	18509999	19489999	1.1	-600	-31818		Hastenrath, S., and A. Ames, 1995, J. Glaciol., 41, 191-196, 10.3198/1995JoG41-137-191-196
PE	YANAMAREY	226	19489999	19829999	1	-100	-25882		Hastenrath, S., and A. Ames, 1995, J. Glaciol., 41, 191-196, 10.3198/1995JoG41-137-191-196
PE	YANAMAREY	226	19829999	19889999	0.8	-200	-7778		Hastenrath, S., and A. Ames, 1995, J. Glaciol., 41, 191-196, 10.3198/1995JoG41-137-191-196
PE	YANAMAREY	226	20000399	20180499	0.3		-26193	Ines Dussaillant	Dussaillant et al. (2019); Nature Geoscience 12, 802–808, doi: 10.1038/s41561-019-0432-5.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
RU - Russia									
RU	DJANKUAT	726	19689999	19749999	2.9	-114	-1900		Popovnin, V.V., and D.A. Petrakov, 2005, Mater. Glyatsol. Issled., 98, 167-174
RU	DJANKUAT	726	19749999	19849999	3.1	250	-900		Popovnin, V.V., and D.A. Petrakov, 2005, Mater. Glyatsol. Issled., 98, 167-174
RU	DJANKUAT	726	19849999	19929999	2.9	-26	-511		Popovnin, V.V., and D.A. Petrakov, 2005, Mater. Glyatsol. Issled., 98, 167-174
RU	DJANKUAT	726	19920701	19990701	2.7	-370	-2770		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Popovnin, V.V., and D.A. Petrakov, 2005, Mater. Glyatsol. Issled., 98, 167-174
RU	DJANKUAT	726	19929999	19969999	3.1	-243	-1273	A.A.Aleynikov and V.V.Popovnin	WGMS (2005): FoG 1995-2000 (Vol. VIII).
RU	DJANKUAT	726	19969999	19989999	2.9		-1753	A.A.Aleynikov and V.V.Popovnin	WGMS (2005): FoG 1995-2000 (Vol. VIII).
RU	DJANKUAT	726	19989999	19999999	2.9	-120	-667	A.A.Aleynikov and V.V.Popovnin	WGMS (2005): FoG 1995-2000 (Vol. VIII).
RU	DJANKUAT	726	20010915	20120906	2.2		-6148	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20010915	20130815	2.2		-5095	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20010915	20170803	2.2		-7339	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20010915	20170810	2.2		-7338	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20010915	20170904	2.2		-10585	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20011026	20170810	2.2		-7511	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20020411	20130815	2.2		-5376	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20020411	20170810	2.2		-8604	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050412	20130605	2.2		-10212	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050412	20130815	2.2		-13063	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050412	20170810	2.2		-19379	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050428	20130605	2.2		-5821	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050428	20130815	2.2		-9778	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050428	20170810	2.2		-15463	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050521	20130527	2.2		-16338	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050521	20130605	2.2		-12428	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050521	20130815	2.2		-17118	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050521	20170803	2.2		-19073	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050521	20170810	2.2		-19738	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20050521	20170904	2.2		-23641	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20061109	20170803	2.2		-16196	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20061109	20170810	2.2		-14019	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20061109	20170904	2.2		-17843	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20080614	20170803	2.2		-14540	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20080614	20170810	2.2		-15638	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20080614	20170904	2.2		-18741	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20081013	20170803	2.2		-7751	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20081013	20170904	2.2		-11288	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20090804	20170810	2.2		-7885	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	DJANKUAT	726	20090804	20170904	2.2		-11785	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	19970809	20170908	4.1	-620	-14210	S.Kutuzov, I.Lavrentiev, G.Nosenko, A.Smirnov	Kutuzov et al., (2019) Front. Earth Sci. 7:153. doi: 10.3389/feart.2019.00153
RU	GARABASHI	761	19979999	20179999			-6000		Kutuzov et al. (2018), Geophysical Research Abstracts, Vol. 20, EGU2018-17160.
RU	GARABASHI	761	20001115	20100807	2.3		4808	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20001115	20170904	2.3		-8015	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20010915	20110810	2.3		-4594	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20010915	20170803	2.3		-12544	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20010915	20170904	2.3		-13569	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20011026	20100807	2.3		4470	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20061109	20170803	2.3		-7389	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
RU	GARABASHI	761	20061109	20170904	2.3		-8532	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
SE - Sweden									
SE	MARMAGLACIAEREN	1461	20020528	20140725	3.7		-15011	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RABOTS GLACIAER	334	19109999	19599999	4.1	-450	-16300		Brugger, K.A., et al., 2005, Ann. Glaciol., 42, 180-188, 10.3189/172756405781813014
SE	RABOTS GLACIAER	334	19599999	19809999	3.8	-300	-12400		Brugger, K.A., et al., 2005, Ann. Glaciol., 42, 180-188, 10.3189/172756405781813014
SE	RABOTS GLACIAER	334	19809999	19899999	3.8	-70	-2700		Brugger, K.A., et al., 2005, Ann. Glaciol., 42, 180-188, 10.3189/172756405781813014
SE	RABOTS GLACIAER	334	19899999	20039999	3.7	-60	-3900		Brugger, K.A., et al., 2005, Ann. Glaciol., 42, 180-188, 10.3189/172756405781813014
SE	RABOTS GLACIAER	334	20039999	20119999	3.4	-260	-7000		Brugger and Pankratz (2015), Geografiska Annaler 97, 265–278, doi: 10.1111/geoa.12062.
SE	RIUKOJIETNA	342	20010820	20131022	4.9		-10086	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RIUKOJIETNA	342	20010820	20140725	4.9		-9300	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RIUKOJIETNA	342	20010820	20140821	4.9		-10598	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RIUKOJIETNA	342	20020528	20140725	4.9		-4796	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RIUKOJIETNA	342	20020528	20160923	4.9		-8272	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RIUKOJIETNA	342	20030618	20140725	4.9		-6543	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	RIUKOJIETNA	342	20030618	20160923	4.9		-10366	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	STORGLACIAEREN	332	19100724	19469999	3.3	-460	-11918		Holmlund & Holmlund (2019), Geografiska Annaler, Series A, Physical Geography, 101 (3), p. 195-210, doi: 10.1080/04353676.2019.1588543.
SE	STORGLACIAEREN	332	19100724	20159999			-30350		Holmlund & Holmlund (2019), Geografiska Annaler, Series A, Physical Geography, 101 (3), p. 195-210, doi: 10.1080/04353676.2019.1588543.
SE	STORGLACIAEREN	332	19499999	19599999			2870		Holmlund, P., 1987, Geogr. Ann., 69A, 439-447, 10.2307/521357
SE	STORGLACIAEREN	332	19499999	19599999			-4985		Holmlund, P., 1987, Geogr. Ann., 69A, 439-447, 10.2307/521357
SE	STORGLACIAEREN	332	19590923	19690914	3.3	0	-4572		Koblet, T., et al., 2010, Cryosphere, 4, 333-343, 10.5194/tc-4-333-2010
SE	STORGLACIAEREN	332	19599999	19699999			-3387		Holmlund, P., 1987, Geogr. Ann., 69A, 439-447, 10.2307/521357
SE	STORGLACIAEREN	332	19599999	19699999			-4683		Holmlund, P., 1987, Geogr. Ann., 69A, 439-447, 10.2307/521357
SE	STORGLACIAEREN	332	19599999	19699999			-2326		Holmlund, P., 1996, Geogr. Ann., 78A, 193-196, 10.2307/520981; Albrecht, O., et al., 2000, Ann. Glaciol., 31, 91-96, 10.3189/172756400781819996
SE	STORGLACIAEREN	332	19690914	19800818	3.2	0	-3303		Koblet, T., et al., 2010, Cryosphere, 4, 333-343, 10.5194/tc-4-333-2010
SE	STORGLACIAEREN	332	19699999	19809999			-2598		Holmlund, P., 1987, Geogr. Ann., 69A, 439-447, 10.2307/521357
SE	STORGLACIAEREN	332	19699999	19809999			-6940		Holmlund, P., 1996, Geogr. Ann., 78A, 193-196, 10.2307/520981; Albrecht, O., et al., 2000, Ann. Glaciol., 31, 91-96, 10.3189/172756400781819996
SE	STORGLACIAEREN	332	19699999	19809999			-3320		Holmlund, P., 1987, Geogr. Ann., 69A, 439-447, 10.2307/521357
SE	STORGLACIAEREN	332	19800818	19900904	3.2	0	1510		Koblet, T., et al., 2010, Cryosphere, 4, 333-343, 10.5194/tc-4-333-2010
SE	STORGLACIAEREN	332	19809999	19909999			5471		Holmlund, P., 1996, Geogr. Ann., 78A, 193-196, 10.2307/520981; Albrecht, O., et al., 2000, Ann. Glaciol., 31, 91-96, 10.3189/172756400781819996
SE	STORGLACIAEREN	332	19900904	19990909	3.3	0	677		Koblet, T., et al., 2010, Cryosphere, 4, 333-343, 10.5194/tc-4-333-2010
SE	STORGLACIAEREN	332	20020528	20140725	3.4		-9062	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SE	STORGLACIAEREN	332	20040508	20140808	3.4		-11752	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ - Svalbard (Norway)									
SJ	AUSTRE BROEGGERBREEN	292	19779999	19859999	11.8		-5200		Janja, J., and J.O. Hagen, 1996, Mass Balance of Arctic Glaciers (TechReport)
SJ	AUSTRE BROEGGERBREEN	292	20010626	20120716	9.8		-3944	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20010626	20130719	9.8		-6143	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20010626	20140518	9.8		-8261	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20010626	20140708	9.8		-5899	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20010714	20140502	9.8		-8602	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20010714	20150630	9.8		-8144	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20020712	20130526	9.8		-8283	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20020712	20140502	9.8		-10542	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20020712	20150705	9.8		-9588	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20020712	20150715	9.8		-10248	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20020712	20150813	9.8		-10383	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20020712	20160702	9.8		-7827	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20130719	9.8		-8859	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20140502	9.8		-10880	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20140518	9.8		-9327	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20140708	9.8		-7766	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20150630	9.8		-9693	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
SJ	AUSTRE BROEGGERBREEN	292	20050504	20150703	9.8		-9372	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20150705	9.8		-7827	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20150707	9.8		-10522	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE BROEGGERBREEN	292	20050504	20150813	9.8		-9856	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE LOVENBREEN	3812	20020712	20100803	5		-3940	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE LOVENBREEN	3812	20020712	20140502	5		-9753	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE LOVENBREEN	3812	20020712	20150813	5		-7820	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE LOVENBREEN	3812	20020712	20160702	5		-6225	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE LOVENBREEN	3812	20050504	20130719	5		-6902	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	AUSTRE LOVENBREEN	3812	20050504	20140708	5		-4531	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	HANSBREEN	306	19900812	20000401			-9600	Jacek Jania, Leszek Kolondra, Mariusz Grabiec	WGMS (2008): FoG 2000-2005 (Vol. IX).
SJ	HANSBREEN	306	20000401	20050401			-7000	Jacek Jania, Leszek Kolondra, Mariusz Grabiec	WGMS (2008): FoG 2000-2005 (Vol. IX).
SJ	IRENEBREEN	2669	20000817	20140510	3.6		-12938	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20000817	20150703	3.6		-13472	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20000817	20170731	3.6		-14974	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20130719	3.6		-14150	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20130915	3.6		-10509	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20140510	3.6		-9755	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20140518	3.6		-11083	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20150319	3.6		-10627	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20150703	3.6		-10861	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20150709	3.6		-10406	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20150715	3.6		-10046	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20150901	3.6		-12456	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010529	20160810	3.6		-12856	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20130719	3.6		-17222	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20130915	3.6		-15268	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20140510	3.6		-14525	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20140518	3.6		-15136	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20140708	3.6		-4289	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20150319	3.6		-14841	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20150703	3.6		-14443	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20150709	3.6		-13704	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20010626	20150901	3.6		-16410	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20020712	20150319	3.6		-14378	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20020712	20150630	3.6		-13517	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20020712	20150709	3.6		-14411	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20020712	20150715	3.6		-15205	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20020712	20160702	3.6		-7935	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20040719	20150709	3.6		-13391	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20040719	20160706	3.6		-7417	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20050504	20130915	3.6		-16742	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20050504	20140510	3.6		-15261	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20050504	20140518	3.6		-15980	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20050504	20140708	3.6		-7954	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20050504	20150709	3.6		-17528	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20050504	20150901	3.6		-18811	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20060720	20150703	3.6		-9693	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20060720	20160810	3.6		-10698	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
SJ	IRENEBREEN	2669	20060720	20170731	3.6		-10977	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	IRENEBREEN	2669	20070901	20150901	3.6		-6288	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	KONGSVEGEN	1456	19669999	20059999	180		-8667		Nuth, C., et al., 2010, J. Geophys. Res., 115, F01008, 10.1029/2008JF001223
SJ	KONGSVEGEN	1456	19969999	20029999			-1740		Bamber, J. L., et al., 2005, Ann. Glaciol., 42, 202-208
SJ	KRONEBREEN	3504	19669999	20059999	370		-18973		Nuth, C., et al., 2010, J. Geophys. Res., 115, F01008, 10.1029/2008JF001223
SJ	MIDTRE LOVENBREEN	291	19360701	19620701	5.2	0	-3900		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kohler, J., et al., 2007, Geophys. Res. Lett., 34, L18502, 10.1029/2007GL030681
SJ	MIDTRE LOVENBREEN	291	19620701	19690701	5.2	0	-1400		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kohler, J., et al., 2007, Geophys. Res. Lett., 34, L18502, 10.1029/2007GL030681
SJ	MIDTRE LOVENBREEN	291	19660728	19770815			-4434		Barrand, N.E., et al., 2010, J. Glaciol., 56, 771-780, 10.3189/002214310794457362
SJ	MIDTRE LOVENBREEN	291	19690701	19770701	5.2	0	-2460		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kohler, J., et al., 2007, Geophys. Res. Lett., 34, L18502, 10.1029/2007GL030681
SJ	MIDTRE LOVENBREEN	291	19770701	19950701	5.2	0	-6260		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kohler, J., et al., 2007, Geophys. Res. Lett., 34, L18502, 10.1029/2007GL030681
SJ	MIDTRE LOVENBREEN	291	19770815	19900815			-4815		Barrand, N.E., et al., 2010, J. Glaciol., 56, 771-780, 10.3189/002214310794457362
SJ	MIDTRE LOVENBREEN	291	19900815	20050705	5.1		-8333		Barrand, N.E., et al., 2010, J. Glaciol., 56, 771-780, 10.3189/002214310794457362
SJ	MIDTRE LOVENBREEN	291	19950701	20030701	5.2	0	-4160		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kohler, J., et al., 2007, Geophys. Res. Lett., 34, L18502, 10.1029/2007GL030681
SJ	MIDTRE LOVENBREEN	291	20020712	20100803	5.2		-2086	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	MIDTRE LOVENBREEN	291	20020712	20140502	5.2		-9671	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	MIDTRE LOVENBREEN	291	20020712	20150715	5.2		-9153	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	MIDTRE LOVENBREEN	291	20020712	20150813	5.2		-9602	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	MIDTRE LOVENBREEN	291	20020712	20160702	5.2		-7502	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	MIDTRE LOVENBREEN	291	20030701	20050701	5.2	0	-1380		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Kohler, J., et al., 2007, Geophys. Res. Lett., 34, L18502, 10.1029/2007GL030681
SJ	MIDTRE LOVENBREEN	291	20030809	20050705			-980		Barrand, N.E., et al., 2010, J. Glaciol., 56, 771-780, 10.3189/002214310794457362
SJ	NORDENSKIOELDBREEN	3479	19370901	19900901	202	-69000	-20640		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744
SJ	NORDENSKIOELDBREEN	3479	19370901	19900901	367	-89000	-13980		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744
SJ	NORDENSKIOELDBREEN	3479	19969999	20029999			-1620		Bamber, J. L., et al., 2005, Ann. Glaciol., 42, 202-208
SJ	WALDEMARBREEN	2307	20000817	20140510	2.9		-13087	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20000817	20170731	2.9		-15251	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20130719	2.9		-18196	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20130915	2.9		-14652	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20140510	2.9		-14768	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20140518	2.9		-14854	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20140708	2.9		-5678	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20150319	2.9		-14653	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20150709	2.9		-15137	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20150715	2.9		-14966	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20150901	2.9		-16561	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010529	20160810	2.9		-16198	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20130719	2.9		-19787	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20130915	2.9		-18433	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20131004	2.9		-17772	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20140510	2.9		-18080	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20140518	2.9		-17456	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20140708	2.9		-9386	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20150319	2.9		-16565	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20150709	2.9		-17418	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20010626	20150901	2.9		-18982	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20020712	20131004	2.9		-15990	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20020712	20150319	2.9		-15448	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20020712	20150630	2.9		-17002	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
SJ	WALDEMARBREEN	2307	20020712	20150709	2.9		-17146	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20020712	20150715	2.9		-16655	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20020712	20160702	2.9		-12357	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20040719	20150709	2.9		-13249	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20040719	20160706	2.9		-8810	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20130719	2.9		-22449	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20130915	2.9		-15570	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20131004	2.9		-16282	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20140510	2.9		-15412	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20140518	2.9		-14876	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20140708	2.9		-7061	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20150709	2.9		-17863	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20050504	20150901	2.9		-18152	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20060720	20160810	2.9		-9316	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20060720	20170731	2.9		-11633	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WALDEMARBREEN	2307	20070901	20150901	2.9		-6409	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WERENSKIOLDBREEN	305	20030724	20130730	26.7		-6172	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WERENSKIOLDBREEN	305	20050723	20150730	26.7		-5102	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
SJ	WERENSKIOLDBREEN	305	20060723	20150730	26.7		-5408	Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
TJ - Tajikistan									
TJ	EAST ZULMART (GLACIER NO 139)	13493	20009999	20169999			-2524	Fanny Brun	Brun et al. (2017); Nature Geoscience, 10(9), 668-673, 10.1038/NGEO2999.
TJ	EAST ZULMART (GLACIER NO 139)	13493	20010928	20130718	3.8		-2701	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
TJ	EAST ZULMART (GLACIER NO 139)	13493	20030614	20130718	3.8		-4544	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
TJ	EAST ZULMART (GLACIER NO 139)	13493	20030614	20130913	3.8		-3857	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
TJ	EAST ZULMART (GLACIER NO 139)	13493	20040616	20130718	3.8		-6776	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
TJ	EAST ZULMART (GLACIER NO 139)	13493	20040616	20130913	3.8		-7466	Martina Barandun, Robert McNabb	Zemp et al. (2019): Nature, 568, 382–386, DOI: 10.1038/s41586-019-1071-0.
US - United States of America									
US	GULKANA	90	19540618	19740907	18.4	-1000	-4830		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Echelmeyer, K.A., et al., 1996, J. Glaciol., 42, 538-547, 10.3198/1996JoG42-142-538-547; Cox, L.H., and R.S. March, 2004, J. Glaciol., 50, 363-370, 10.3189/172756504781829855
US	GULKANA	90	19540618	19930612	17	-1500	-10900		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Echelmeyer, K.A., et al., 1996, J. Glaciol., 42, 538-547, 10.3198/1996JoG42-142-538-547
US	GULKANA	90	19540618	19950517			-17767		Arendt, A., et al., 2009, J. Clim., 22, 4117-4134, 10.1175/2009JCLI2784.1
US	GULKANA	90	19670831	20160830	16	-2700	-31300	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	GULKANA	90	19740904	20160830	16	-2400	-27800	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	GULKANA	90	19740907	19930711			-6666		Echelmeyer, K.A., et al., 1996, J. Glaciol., 42, 538-547, 10.3198/1996JoG42-142-538-547
US	GULKANA	90	19740907	19930711	17.1	-1300	-4890		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Cox, L.H., and R.S. March, 2004, J. Glaciol., 50, 363-370, 10.3189/172756504781829855
US	GULKANA	90	19740920	19930908			-6000	Leif Cox, Rod March	WGMS (2008): FoG 2000-2005 (Vol. IX).
US	GULKANA	90	19790825	20160830	16	-2100	-22600	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	GULKANA	90	19930612	19950517	17	0	-7550		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Arendt, A.A., et al., 2002, Science, 297, 382-386, 10.1126/science.1072497; Echelmeyer, K.A., et al., 1996, J. Glaciol., 42, 538-547, 10.3198/1996JoG42-142-538-547
US	GULKANA	90	19930711	19990818	17.1	0	-6440		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Cox, L.H., and R.S. March, 2004, J. Glaciol., 50, 363-370, 10.3189/172756504781829855
US	GULKANA	90	19930711	20160830	16	-2000	-19900	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	GULKANA	90	19950517	20000609	20	0	-3950		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Arendt, A.A., et al., 2002, Science, 297, 382-386, 10.1126/science.1072497
US	GULKANA	90	20050808	20160830	16	-900	-8100	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	GULKANA	90	20070811	20160830	16	-900	-6900	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	LEMON CREEK	3334	19480701	19570918	12.6	-190	-1930		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Marcus, M.G., et al., 1995, Phys. Geogr., 16, 150-161
US	LEMON CREEK	3334	19480701	19950531			-33944		Arendt, A., et al., 2009, J. Clim., 22, 4117-4134, 10.1175/2009JCLI2784.1
US	LEMON CREEK	3334	19480705	20181001	9.7	-3100	-58400	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
US	LEMON CREEK	3334	19570918	19899999	11.7	-890	-10800		Sapiano et al. (1998), J. Glaciol., 44, 119-135, 10.3198/1998JoG44-146-119-135.
US	LEMON CREEK	3334	19570918	19950531	11.7	-330	-13800		Sapiano et al. (1998), J. Glaciol., 44, 119-135, 10.3198/1998JoG44-146-119-135.
US	LEMON CREEK	3334	19570918	20181001	9.7	-2700	-46900	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	LEMON CREEK	3334	19579999	19899999	11.7	-890	-11000		Sapiano et al. (1998), J. Glaciol., 44, 119-135, 10.3198/1998JoG44-146-119-135.
US	LEMON CREEK	3334	19579999	19949999	11.7	-330	-15800		Sapiano et al. (1998), J. Glaciol., 44, 119-135, 10.3198/1998JoG44-146-119-135.
US	LEMON CREEK	3334	19790811	20181001	9.7	-2400	-43200	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	LEMON CREEK	3334	19890828	20181001	9.7	-2000	-38200	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	LEMON CREEK	3334	19899999	19949999			-5000		Sapiano et al. (1998), J. Glaciol., 44, 119-135, 10.3198/1998JoG44-146-119-135.
US	LEMON CREEK	3334	19899999	19950531			-3000		Sapiano et al. (1998), J. Glaciol., 44, 119-135, 10.3198/1998JoG44-146-119-135.
US	LEMON CREEK	3334	19950531	19990604	14	0	-5880		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Arendt, A.A., et al., 2002, Science, 297, 382-386, 10.1126/science.1072497
US	LEMON CREEK	3334	20000211	20181001	9.7	-1000	-23400	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	LEMON CREEK	3334	20130904	20181001	9.7	-700	-13100	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	LEMON CREEK	3334	20160828	20181001	9.7	-400	-6200	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	19580813	20151014	1.8	-1100	-39000	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	19580821	19610912	2.7	-50	-2850		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Meier, M.F., and W.V. Tangborn, 1965, J. Glaciol., 5, 547-566
US	SOUTH CASCADE	205	19610912	19640911	2.7	-60	-90		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1989, in: Glacier Fluctuations and Climatic Change, 193-206, Dordrecht
US	SOUTH CASCADE	205	19640911	19700909	2.6	-40	-5510		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1989, in: Glacier Fluctuations and Climatic Change, 193-206, Dordrecht
US	SOUTH CASCADE	205	19700929	19750924	2.6	-50	2770		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19700929	20151014	1.8	-900	-30700	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	19709999	19769999	2.7		3665		PSFG (1985): FoG 1975-1980 (Vol. IV).
US	SOUTH CASCADE	205	19750924	19770913	2.6	-10	-1870		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19770913	19791010	2.6	-10	-1680		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19791006	20151014	1.8	-900	-30400	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	19791010	19801003	2.6	-10	-2070		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19801003	19850924	2.5	-30	-6680		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19850924	19860905	2.5	-10	-640		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19860905	19870909	2.5	0	-1970		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19860905	20151014	1.8	-800	-27300	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	19870909	19880821	2.5	-10	-1350		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19880821	19890912	2.5	0	-1210		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19890912	19900905	2.1	-400	-1320		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19900905	19910909	2.1	0	-1220		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19910909	19921006	2.1	0	-2430		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19921006	19930901	2.1	-10	-1340		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19921006	20151014	1.8	-500	-19300	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	19930901	19940906	2.1	-30	-1460		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19940906	19950912	2	-20	-900		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	19950912	19960910	2	0	-620		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Krimmel, R.M., 1999, Geogr. Ann., 81A, 653-658, 10.1111/j.0435-3676.1999.00093.x
US	SOUTH CASCADE	205	20010920	20151014	1.8	-400	-13800	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SOUTH CASCADE	205	20040926	20151014	1.8	-300	-9500	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.

PU	GLACIER_NAME	WGMS_ID	FROM	TO	AREA	AREA_CHG	THICKNESS_CHG	INVESTIGATORS	REFERENCES
US	SOUTH CASCADE	205	20081001	20151014	1.8	-200	-5800	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	SPERRY	218	20050902	20140907	0.8	-50	-1100	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	TAKU	124	19480701	19930701			32000		Arendt, A., et al., 2009, J. Clim., 22, 4117-4134, 10.1175/2009JCLI2784.1
US	TAKU	124	19480701	20000210	756.9	0	21840		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Larsen, C.F., et al., 2007, J. Geophys. Res., 112, F01007, 10.1029/2006JF000586
US	TAKU	124	19480813	20181001	725.2	20800	-20400	Chris McNeil	
US	TAKU	124	19930701	19990701	816	0	-7740		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Arendt, A.A., et al., 2002, Science, 297, 382-386, 10.1126/science.1072497
US	TAKU	124	20000211	20181001	725.2	-200	6100	Chris McNeil	
US	TAKU	124	20130904	20181001	725.2	-1900	6300	Chris McNeil	
US	WOLVERINE	94	19500701	19940527			-23467		Arendt, A., et al., 2009, J. Clim., 22, 4117-4134, 10.1175/2009JCLI2784.1
US	WOLVERINE	94	19690825	20180912	15.6	-1500	-20200	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	WOLVERINE	94	19720913	20180912	15.6	-1500	-21100	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	WOLVERINE	94	19740311	19850612	18.1	0	1830		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Trabant, D.C., and R.S. March, 1999, Geogr. Ann., 81A, 777-789, 10.1111/j.0435-3676.1999.00105.x
US	WOLVERINE	94	19749999	19859999	17.2		4060		WGMS (1993): FoG 1985-1990 (Vol. VI).
US	WOLVERINE	94	19790803	20180912	15.6	-1400	-20100	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	WOLVERINE	94	19940527	19990513	19	0	-5150		Cogley, G., 2009, Ann. Glaciol., 50, 96-100, 10.3189/172756409787769744; Arendt, A.A., et al., 2002, Science, 297, 382-386, 10.1126/science.1072497
US	WOLVERINE	94	19950927	20180912	15.6	-1200	-17500	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	WOLVERINE	94	20060808	20180912	15.6	-700	-10200	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.
US	WOLVERINE	94	20160910	20180912	15.6	-300	-2800	Shad O'Neel	O'Neel et al. (2019); Journal of Glaciology 65, 850-866. https://doi.org/10.1017/jog.2019.66.